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THE  
BRITISH AND FOREIGN  
MEDICAL REVIEW  
OR  
QUARTERLY JOURNAL  
OF  
PRACTICAL MEDICINE AND SURGERY

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EDITED BY  
JOHN FORBES M.D. F.R.S.

AND  
JOHN CONOLLY M.D.

EDITORS OF THE CYCLOPÆDIA OF PRACTICAL MEDICINE

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# CONTENTS OF No. III.

OF THE

## BRITISH AND FOREIGN MEDICAL REVIEW.

### PART FIRST.—Analytical and Critical Reviews.

	PAGE
ART. I.—A further Inquiry concerning Constitutional Irritation, and the Pathology of the Nervous System. By BENJAMIN TRAVERS, F.R.S., senior Surgeon to St. Thomas's Hospital, &c.	1
ART. II.—Leçons de Clinique Médicale, faites à l'Hôtel-Dieu de Paris par le Professeur A. F. CHOMEL, recueillies et publiées sous ses yeux par J. L. GENEST, D.M.P. (Fièvre Typhoïde.)	33
Clinical Lectures delivered by Professor CHOMEL at the Hôtel Dieu in Paris, (Typhoid Fever.) Collected and published by J. L. GENEST.	
ART. III.—A Practical Treatise on Midwifery; containing the Result of 16,654 Births, occurring in the Dublin Lying-in Hospital, during a Period of Seven Years, commencing November, 1826. By ROBERT COLLINS, M.D., late Master of the Institution	71
ART. IV.—Mémoire sur une Manière nouvelle de pratiquer l'Opération de la Pierre. Par le Baron DUPUYTREN. Terminé et publié par L. J. SANSON, Chirurgien de l'Hôtel Dieu, &c., et par L. J. BEGIN, Chirurgien en chef à l'Hôpital Militaire de Strasbourg, &c.	98
Memoir on a new Method of Cutting for the Stone. By BARON DUPUYTREN. Completed and published by L. J. SANSON and J. L. BEGIN.	
ART. V.—An Essay on the Laryngismus Stridulus, or Croup-like Inspiration of Infants. To which are appended, Illustrations of the general Principles of the Pathology of Nerves, and of the Functions and Diseases of the Par Vagum and its principal Branches. By HUGH LEY, M.D. &c.	112
ART. VI.—A Treatise on the more obscure Affections of the Brain, on which the Nature and successful Treatment of many Chronic Diseases depend. Being the Gulstonian Lectures, delivered at the College of Physicians, in May, 1835. By A. P. W. PHILIP, M.D., F.R.S.L. & E., &c.	129
ART. VII.—A Theoretical and Practical Treatise on the Diseases of the Skin. By P. RAYER, M.D., Physician to the Hôpital de la Charité, &c. With an Atlas. The Second Edition, entirely remodelled	147
ART. VIII.—Medico-Chirurgical Transactions; published by the Royal Medical and Chirurgical Society of London. Volume the Nineteenth	158
1. Cases of Fracture of the Neck of the Femur, with the Appearances observed after Death. By Mr. HOWSHIP	159
2. Cases of Warty Tumours in Cicatrices. By CESAR HAWKINS, Esq.	161
3. A Case of Abdominal Tumour. By Mr. HOWSHIP	163
4. A Case of Pulmonary Phlebitis. By Dr. R. LEE	ib.
5. On Ulceration of the Cartilages of the Joints, &c. By Mr. H. MAYO	ib.
6. Singular Laceration of the Peritoneal Coat of the Uterus. By Mr. PARTRIDGE	164
7. On the Chemical Constitution of Calcareous Tumours of the Uterus, and other Parts. By JOHN BOSTOCK, M.D. F.R.S. &c.	ib.
8. On Fibro-calcareous Tumours and Polypi of the Uterus. By Dr. R. LEE	165
9. Further Remarks on the Ulcerative Process. By C. ASTON KEY, Esq.	166
10. Mr. COCK and Mr. THURNAN on the Ear	167
11. Dr. SEYMOUR on Mental Derangement	ib.
12. Cases and Observations illustrative of Diagnosis when Adhesions have taken place in the Peritoneum; with Remarks upon some other Morbid Changes of that Membrane. By RICHARD BRIGHT, M.D. F.R.S. &c.	ib.
13. On the Medicinal Properties of Creosote. By J. ELLIOTSON, M.D. &c.	168

## PART SECOND.—Bibliographical Notices.

	PAGE
ART. I.—On Bloodletting. By JAMES WARDROP, M.D. &c.	171
ART. II.—Klinische Mittheilungen, von Dr. F. A. G. BERNDT, Königl. Geheimen Medizinal Rathe, u. s. f.	176
Clinical Communications, by Dr. F. A. G. BERNDT.	
ART. III.—Remarks on the Unity of the Body, as illustrated by some of the more striking Phenomena of Sympathy, both Mental and Corporeal, with a view of enlarging the Grounds and improving the Application of the Constitutional Treatment of Local Diseases. By GEORGE MACILWAIN, Esq., &c.	180
ART. IV.—Statistical Inquiry into the present State of the Medical Charities of Ireland: with Suggestions for a Medical Poor-Law, by which they may be ren- dered much more extensively efficient. By DENNIS PHELAN, Esq., &c.	183
ART. V.—Elémens de Chimie. Par E. MITSCHERLICH, Professeur de Chimie à Berlin, &c. Traduits de l'Allemand sur la dernière Edition, par M. B. VALERIUS, de l'Université de Gand	188
ART. VI.—Illustrations of the Comparative Anatomy of the Nervous System. By JOSEPH SWAN, Esq.	192
ART. VII.—The Anatomy of the Regions interested in Surgical Operations per- formed upon the Human Body; with occasional Views of the Pathological Conditions which render the Interference of the Surgeon necessary. In a Series of Plates the size of life. By J. LEBAUDY, M.D. Parts I. II. III.	196
ART. VIII.—Guy's Hospital Reports. No. II. April, 1836. Edited by GEORGE H. BARLOW, M.A. and JAMES P. BABINGTON, M.A.	198
St. Thomas's Hospital Reports. By JOHN F. SOUTH, Assistant Surgeon. No. II. and III. January, 1836	ib.
ART. IX.—System der Chirurgie. By P. F. VON WALTHER, Doctor der Philo- sophie, Medicin und Chirurgie, &c.	202
ART. X.—A brief Memoir of Sir WM. BLIZARD, Knt., F.R.S. L. and E., Surgeon and Vice-President of the London Hospital. Read before the Hunterian Society, 7th October, 1835; with additional Particulars of his Life and Writings. By WM. COOKE, Member of the Royal College of Surgeons, &c.	205
ART. XI.—Formulaire pour la Préparation et l'Emploi de plusieurs nouveaux Médicaments. Par F. MAGENDIE. Huitième Edition, revue et augmentée	207
A Formulary for the Preparation and Medical Administration of certain new Remedies. Translated from the French of M. MAGENDIE, with Annotations and additional Articles, by JAMES MANBY GULLY, M.D.	ib.
ART. XII.—A new Practical Formulary of Hospitals of England, Scotland, Ireland, France, Germany, &c. Translated from the new French Edition of MM. MILNE EDWARDS and P. VAVASSEUR, and considerably augmented, by MICHAEL RYAN, M.D.	210
ART. XIII.—Philosophical Transactions of the Royal Society of London, for the year 1835. Parts I. and II.	212
Proceedings of the Royal Society. Nos. 18—23. From November 20, 1834, to February, 1836	ib.
ART. XIV.—Das Streckfieber und dessen Behandlung, im Umriss dargestellt. Von Dr. G. C. REICH, Professor der Medicin, &c.	219
An Outline of the History and Treatment of the Fever of Growth. By Dr. G. C. REICH, Professor of Medicine, &c.	
ART. XV.—Eupædia; or, Letters to a Mother on the watchful Care of her Infant, in reference to Diet, Clothing, Air, Exercise, Medicine, &c. By A PHYSICIAN	221
ART. XVI.—On Dropsies connected with suppressed Perspiration and coagulable Urine. By JONATHAN OSBORNE, M.D.	222
ART. XVII.—On Diseases of the Hip-Joint; with some Observations on Deformi- ties of the Chest. By WM. COULSON, M.B.C.S.	231

# CONTENTS OF NO. III.

III.  
PAGE

## ART. XVIII.— THE FOREIGN JOURNALS. No. III.

### DANISH JOURNALS:

4. Samlinger til den Danske Medicinal Historie, udgivne af Dr. J. D. HERHODLT og Dr. F. V. MANSA . . . . . 231  
Collections in the Medical History of Denmark, &c.

### THE GERMAN JOURNALS:

9. Medicinische Zeitung. Herausgegeben von dem Verein für heilkunde in Preussen. (Medical Gazette, &c.) . . . . . 232  
10. Zeitschrift für die Ophthalmologie. Herausgegeben von Dr. F. A. VON AMMON, Professor an der Chirurgisch-medicinischen Akademie zu Dresden . . . . . ib.  
Journal of Ophthalmology. Edited by Dr. F. A. VON AMMON.

### AMERICAN JOURNALS:

4. The American Journal of Pharmacy, published by authority of the Philadelphia College of Pharmacy. Edited by R. E. GRIFFITH, M.D. 233

### COLONIAL JOURNALS:

1. Revista Medica Fluminense, publicado pela Sociedade de Medicina do Rio de Janeiro . . . . . 234  
The Rio Medical Review, published by the Medical Society of Rio Janeiro ib.

## PART THIRD.—*Selections from Foreign Journals.*

### ANATOMY.

- On the Arteries of the Corneal Conjunctiva. By Dr. RÖMER, of Vienna . . . . . 255

### PHYSIOLOGY.

- On the Power by which the Head of the Thigh-bone is retained in its Socket. By Dr. EDUARD WEBER . . . . . 236

### MEDICINE,

#### PATHOLOGICAL, PRACTICAL, AND THERAPEUTICAL.

- On Thymic Asthma. By Dr. HIRSCH, of Königsberg . . . . . 237  
Illustrations of the Diseases produced in Man by the Affection termed Glanders in Horses. By Dr. ALEXANDER, of Utrecht; Dr. BERRA, of Mantua; and Dr. FENELLI, of Ostianl . . . . . 241  
New Mode of administering Balsam of Copalba. By M. RATIER . . . . . 243  
On the Effects of Indigo in Epilepsy and other Spasmodic Affections. By Dr. ROTH, of Mayence . . . . . 244  
Case of unusually prolonged Sneezing, cured by Snuff. By Dr. BAUWENS . . . . . 245  
The Magnet, a Remedy for Gout . . . . . 246  
On the Relations between the State of the Pulse, Respiration, and Temperature of the Body, in Diseases. By Dr. AL. DONNÉ . . . . . ib.  
On the Presence of Worms in the Air-Passages. By L. ABOUSSOHN . . . . . 249  
Salutary Effects of Smallpox. By L. POLLETTI, M.D. . . . . 250  
Report on Vaccination in France during 1833. By M. GERARDIN . . . . . 251  
On Carburet of Sulphur in Rheumatism. By Professor OTTO, of Copenhagen . . . . . 252

### SURGERY.

- On the Treatment of Inflammation of the Testicle by means of Compression. By J. C. F. FRICKER, Surgeon to the General Hospital in Hamburg . . . . . 253  
On Fractures of the Inferior Extremity of the Radius. By G. GOYRAUD, M.D. of Aix. (*With Woodcuts.*) . . . . . 256  
Surgical Observations. By Professor CHELIUS, of Heidelberg . . . . . 259  
On the Use of Belladonna as a Topical Application in Retention of Urine, Spasmodic Contractions of the Uterus, and in Strangulated Hernia. By M. GERARD, M. CARRÉ, and PIETRO PORTA, M.D. . . . . 261



## IV.

## CONTENTS OF NO. III.

	PAGE
On the Influence of Atmospheric Heat in the Cure of Wounds and Ulcers. By M. JULES GUYOT, D.M.P.	263
On the Treatment of White Swellings. By M. LISFRANC	266
Chlorine Gas as an Injection for the Cure of Hydrocele. By M. DECONDÉ	267
On Traumatic Ophthalmia. By Dr. SCHINDLER	ib.
On Foreign Bodies adhering to the Cornea, and the Manner of removing them. By Dr. SCHINDLER	269
On the Power of Nature in curing severe Diseases of the Eye. By Dr. LORCH	270

## MIDWIFERY.

Case of Cesarean Operation performed three times successfully on the same Individual. By Dr. MICHAELIS, of Kiel	ib.
Report of Cases at the Lying-in Hospital at Dresden, during the years 1833 and 1834	273
On the Acidity of the Catamenial Blood; and on the Theory of its Origin. By M. C. RETZIUS, M.D., of Stockholm	274
A new Diagnostic Sign of Pregnancy. By Professor KLUGE, of Berlin	275
Use of Ergot in inducing Abortion. By Dr. WEIHE	276

## MEDICAL STATISTICS.

Statistical Researches on Calculous Diseases. By Dr. CIVIALE	ib.
On Suicide in the Canton of Geneva. By M. PREVOST	277
Statistical Report of the Cholera in Italy, in the year 1835; containing the approximate Results, from its invasion to its cessation, in the Cities where it has chiefly prevailed	279
Vaccination in Austria	280
Revaccination in the Prussian Army in 1834	ib.

## CHEMISTRY, PHARMACY, &amp;c.

Detection of Sugar in the Blood in Diabetes, and on the best Mode of separating the same Substance from the Urine. By FELICE AMBROSIONI, of Milan	281
On the Effects of Boiling Meat and Vegetables. By M. CHEVREUL	282
Simplified Method of obtaining Creosote. By ANT. GIORDANO	283

## TOXICOLOGY.

Experiments on the Action of Oxalic Acid. By J. W. ARNOLD	284
---	-----

## PART FOURTH.—Medical Intelligence.

On the PRESENT STATE of MEDICINE in DENMARK. By C. OTTO, M.D., Professor of Medicine in the University of Copenhagen.—First Report: On the MEDICAL INSTITUTIONS and the MEDICAL PROFESSION	285
The Siamese Twins	299
Provincial Medical and Surgical Association	300
Eastern Provincial Medical and Surgical Association	ib.
A Literary (Medical) Curiosity	301
New Magazine of Zoology and Botany	ib.
The Jacksonian Prize	302
Fothergillian Prize Essays for 1837 and 1838	ib.
OBITUARY.—JOHN FLETCHER, M.D.	ib.
NATHAN DRAKE, M.D.	305
Dr. WALSHMAN	ib.
DAVID HOSACK, M.D., F.R.S. L. & E.	306
LIST of BOOKS received for Review	ib.

# CONTENTS OF No. IV.

FOR OCTOBER, 1836.

## PART FIRST.—Analytical and Critical Reviews.

	PAGE
ART. I.— <i>Traité Clinique des Maladies du Cœur, précédé de Recherches nouvelles sur l'Anatomie et la Physiologie de cet Organe.</i> Par J. BOUILLAUD, Professeur de Clinique Médicale à la Faculté de Médecine de Paris	309
A Clinical Treatise on the Diseases of the Heart, preceded by original Researches on the Anatomy and Physiology of that Organ. By J. BOUILLAUD, Clinical Professor to the Faculty of Medicine at Paris.	
ART. II.— <i>A Treatise on Diseases of the Eye and its Appendages.</i> By RICHARD MIDDLEMORE, M.B.C.S., Surgeon to the Birmingham Eye Infirmary	342
ART. III.— <i>Analekten ueber Kinderkrankheiten: oder Sammlung ausserwählter abhandlungen ueber die krankheiten des kindlichen alters, zusammengestellt zum gebrauch für praktische Aerzte.</i> Heft I.—VIII.	353
Selections in Children's Diseases; or, a Collection of Select Treatises on Infantile Diseases, for the use of practical Physicians. Parts I.—VIII.	
ART. IV.— <i>The Physiology of Digestion, considered with Relation to the Principles of Dietetics.</i> By ANDREW COMBE, M.D.	368
ART. V.—1. <i>Médecine Légale, Théorique et Pratique,</i> par ALPH. DEVERGIE, Docteur en Médecine, Professeur agrégé de la Faculté de Médecine de Paris, Professeur de Médecine Légale et de Chimie Médicale, &c. Avec le Texte, et l'Interprétation des Lois relatives à la Médecine Légale, revus et annotés par J. B. F. DEHAUSSY DE ROBECOURT, Conseiller à la Cour de Cassation, &c. Tom. I., Tom. II. P. I.	390
Forensic Medicine, Theoretical and Practical, by ALPH. DEVERGIE, &c. With the Text, and Explanations of the Laws relating to Forensic Medicine, reviewed and commented upon by J. B. F. DEHAUSSY ROBECOURT.	
2. <i>Elements of Medical Jurisprudence.</i> By ALFRED S. TAYLOR, F.L.S., Lecturer on Medical Jurisprudence and Chemistry in Guy's Hospital. Vol. I.	390
ART. VI.—1. <i>Nouvelles Recherches sur la Structure de la Peau.</i> Par M. G. BRESCHET et M. ROUSSEL DE VAUZEME	429
New Enquiries on the Structure of the Skin. By M. G. BRESCHET and M. ROUSSEL DE VAUZEME.	
2. <i>Vergleichende Untersuchungen über die Haut des Menschen und des Haus-Säugethiere, besonders in Beziehung auf die Absonderungsorgane des Haut-Talgcs und des Schweißes.</i> Von GURLT	ib.
On the Comparative Anatomy of the Skin of Man and the Domestic Mammalia, more particularly as it regards the Organs of the Oleaginous Secretion and of the Perspiration. By Professor GURLT.	
3. <i>Ueber die menschliche Epidermis.</i> Von Dr. ALPHONS WENDT	ib.
On the Human Epidermis. By Dr. ALPHONS WENDT.	
ART. VII.— <i>Illustrations of the Elementary Forms of Disease.</i> By ROBERT CARSWELL, M.D., Professor of Pathological Anatomy in the University of London, &c. Fasciculus IX. and X.	456
ART. VIII.— <i>Rapport et Discussions à l'Académie Royale de Médecine sur la Taille et la Lithotritie, &amp;c.</i>	466
Report and Discussion at the Royal Academy of Medicine, on Lithotomy and Lithotrity, &c.	

PART SECOND.—Bibliographical Notices.

	PAGE
ART. I.—Lectures on Subjects connected with Clinical Medicine. By P. M. LATHAM, M.D., Fellow of the Royal College of Physicians, and Physician to St. Bartholomew's Hospital	473
ART. II.—An Enquiry into the Pathology, Causes, and Treatment of Puerperal Fever: being an Essay for which the Fothergillian Gold Medal was conferred on the Author, by the Medical Society of London, in March, 1835. By G. MOORE, F.R.C.S. &c.	481
ART. III.—Medical Commentaries on Puerperal Fever, Vermination, and Water in the Head. By JOHN ALEXANDER, M.D., Medical Officer to the General Dispensary for Children, and Bank of Manchester, &c.	490
ART. IV.—An Essay on the Operation for Cleft Palate. By GEORGE BUSHE	493
ART. V.—On the Medical Properties of the Natural Order Ranunculaceæ; and more particularly on the uses of <i>Sabadilla Seeds</i> , <i>Delphinium staphisagria</i> , and <i>Aconitum napellus</i> , and their Alkaloids, <i>Veratria</i> , <i>Sabadilline</i> , <i>Delphinia</i> , and <i>Aconitine</i> . By A. TURNBULL, M.D.	499
ART. VI.—1. Ueber die Augenkrankheit, welche in der Belgischen Armee herrscht. Nebst einigen Bemerkungen über die Augenkrankheiten am Rheine, und über Augenblennorrhoeen im Allgemeinen. Von J. C. JÜNGKEN, u. s. w.	501
On the Ophthalmia which prevails in the Belgian Army: with some Remarks on the Eye-Diseases on the Rhine, and Purulent Ophthalmia in general. By J. C. JÜNGKEN, M.D., Prof. of Medicine in the University of Berlin, &c.	
2. Ueber die Augenkrankheit welche in der Kaiserlich-Russischen activen Armee herrscht. Von ROMAN TSCHETIRKIN, M.D. &c. Aus dem Russischen, von Dr. MAGAZINER	504
On the Ophthalmia prevalent in the Imperial Russian Army. By Dr. TSCHETIRKIN. Translated from the Russian by Dr. MAGAZINER.	
ART. VII.—A Dictionary of Terms employed by the French, in Anatomy, Physiology, Pathology, Practical Medicine, Surgery, Midwifery, &c. &c.; with their Derivation from the Greek and Latin; their Synonyms in the Greek, Latin, French, German, and English; and Illustrations in the different Languages. By SHIRLEY PALMER, M.D. Parts I. and II. (A.—Hal.)	508
ART. VIII.—Traité Théorique et Pratique sur les Altérations organiques simple et cancéreuses de la Matrice. Par F. DUPARCQUE, D.M. &c.	511
A Theoretical and Practical Treatise upon simple and cancerous Organic Alterations of the Uterus, &c.	
ART. IX.—Medical and Physical Researches; or, Original Memoirs in Medicine, Surgery, Physiology, Geology, Zoology, and Comparative Anatomy. Illustrated with Plates, containing 160 Figures. By R. HARLAN, M.D. F.L.S. London; Surgeon to the Philadelphia Almshouse Hospital; Professor of Comparative Anatomy, &c.	518
ART. X.—Einige Bemerkungen über den einfluss der Witterung auf den Menschlichen organismus überhaupt, und insbesondere auf die anwendung der Seebäder in Dobberan. Vom Dr. JOHANN H. BECKER	520
Remarks on the Influence of the Weather on Man, and on the Use of Seabathing. By J. H. BECKER, M.D.	
ART. XI.—The Obstetrician's Vade Mecum; or, Aphorisms on Natural and Difficult Parturition; the application and use of Instruments in Preterm Labours, or Labours complicated with Hemorrhage, Convulsions, &c. By THOMAS DENMAN, M.D. &c. Considerably augmented, and arranged according to the present State of Obstetrics, by MICHAEL STAN, Esq. Ninth Edition. Illustrated with seventeen Plates, and a Portrait of the Author	523

# CONTENTS OF NO. IV.

III.

PAGE

ART. XII.— <i>Diagnostisch-praktische Abhandlungen aus dem Gebiete der Medicin und Chirurgie, durch Krankheitsfälle erläutert. Vom Dr. LÖWENHARDT. Erster Theil</i>	526
Diagnostic and Practical Essays on Medical and Surgical Subjects, illustrated by Cases. By Dr. LÖWENHARDT. Part First.	
ART. XIII.— <i>Erfahrungen ueber die Anwendung der Kalte in Krankheiten. Von J. D. BRANDIS, M.D. Königl. Dänischen Leibarzte, &amp;c.</i>	529
Practical Observations on the Use of Cold in the Treatment of Disease. By J. D. BRANDIS, M.D. Physician in Ordinary to the King of Denmark, &c.	
ART. XIV.— <i>Della artificiale Riduzione a Solidità Lapidea e Inalterabilità degli Animali, scoperta da GIROLAMO SEGATO. Relazione dell' Avvocato GIUSEPPE PELLEGRINI</i>	532
Of the artificial Conversion of Animals to a State of stony Induration and Indestructiveness, discovered by GIROLAMO SEGATO. By G. PELLEGRINI.	

## PART THIRD.—Selections from Foreign Journals.

### MORBID ANATOMY.

Case of Aneurism of the Thoracic Duct. By Dr. ALBERS, of Bonn	535
On the Anatomical Condition of Diseased Bone. By Professor GERDY	ib.

### PHYSIOLOGY.

On the Physiology of Vomiting; and on the Causes of its Difference in Adults and Children. By Professor C. H. SCHULTZ, M.D. ( <i>With Woodcuts.</i> )	537
On the Influence of the Nerves on the Development of the Muscular System. By Professor ANTONIO ALESSANDRINI	543

### MEDICINE,

#### PATHOLOGICAL, PRACTICAL, AND THERAPEUTICAL.

On Pneumonia of the Old. By MM. HOURMANN and DECHAMBRE	ib.
On Gangrene of the Lungs in the Insane. By J. GUISLAIN, M.D.	546
On the Nature and Mode of Action of Cantharides. By Dr. DOMENICO NARDO, of Venice, and Dr. TOMMASO PULLINO, of Alba	548
On the Softening of the Mucous Membrane of the Intestinal Canal in Children. By Dr. DROSTZ, of Osnaburg	551
On the Treatment of Tympanites with Camphor, Musk, and Ammoniacum. By Drs. TRADINI and SANTOLI	552
An Enquiry into some Points of the History of Leucorrhœa. By Dr. MARC L'ESPINE	553
On the Use of Chloride of Soda in Intermittent Fevers. By Dr. GOUZEE	ib.
On the External Application of Croton Oil in Affections of the Larynx. By Dr. ROMBERG	554
Expectoration of Bronchial Polypus, independent of Croup. By Prof. CASPER	ib.
On Incontinence of Urine. By M. MONDIERE	555
Formula for an artificial Chalybeate Water	ib.
New Method of applying Cinnamon Fumigations	ib.

### SURGERY.

On Diseases of the Lymphatic System. By Professor VELPEAU	556
---	-----

## IV.

## CONTENTS OF NO. IV.

	PAGE
On Vesico-Vaginal Fistulae, and on a new Method of treating them. By M. JOBERT . . . . .	561
On the Cure of Erectile Tumours. By Professor LALLEMAND, of Montpellier . . . . .	564
On certain Modifications in the Treatment of Hernia. By M. GERDY . . . . .	566
On the Employment of Muriate of Barytes in the Treatment of White Swellings. By M. LISFRANC . . . . .	567
On the Cure of Intestinal Fistulae by the actual Caustery. By Dr. FINGERHUTH . . . . .	ib.
Case of Local Hereditary Relaxation of the Skin. By Dr. GRAF, of Königsberg . . . . .	568

## MIDWIFERY.

History of a successful Case of Cæsarean Section. By Dr. MEYER, of Minden . . . . .	ib.
Case of Extra-uterine Pregnancy. By Dr. LÖSCHER, of Lübben, and Professor BUSCH, of Berlin . . . . .	570
Case of Fatal Hemorrhage from an Erectile Tumour of the Uterus. By Professor KILIAN, of Bonn . . . . .	571

## HYGIÈNE.

On the Causes of Colica Pictonum amongst the Workmen who prepare White Lead. By M. CHEVALLIER . . . . .	573
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PART FOURTH.—~~Medical~~ Intelligence.

On the PRESENT STATE of MEDICINE in PRUSSIA. By J. F. C. HECKER, M.D., Professor of Medicine in the University of Berlin.—Second Report: MEDICAL SOCIETIES in PRUSSIA . . . . .	577
On the PRESENT STATE of MEDICINE in the UNITED STATES. By ROBLEY DUNGLISON, M.D., Professor of the Institutes of Medicine and Medical Jurisprudence in Jefferson College, Philadelphia.—Article I.: Of the MEDICAL INSTITUTIONS . . . . .	583
Report of the Medical Section of the British Association for the Advancement of Science. Held at Bristol, in August, 1836 . . . . .	594
Report of the Meeting of the Provincial Medical and Surgical Association . . . . .	601
Southern Branch of the Provincial Medical and Surgical Association . . . . .	606
Report of the Court of Examiners to the Society of Apothecaries . . . . .	ib.
Medical Witnesses' Bill . . . . .	607
University of Edinburgh. Prizes to be given by the Medical Faculty . . . . .	609
Teachers of Anatomy and Surgery. To Gentlemen applying for the Recognition of the Royal College of Surgeons in London, as Teachers of Anatomy and Surgery . . . . .	610
Botanical Society of Edinburgh . . . . .	611
The New Registration Act . . . . .	ib.
OBITUARY.—Dr. HENRY . . . . .	612
Professor HUFELAND . . . . .	613
LIST of BOOKS received for Review . . . . .	ib.

THE  
BRITISH AND FOREIGN  
MEDICAL REVIEW,

FOR JULY, 1836.

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PART FIRST.

Analytical and Critical Reviews.

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ART. I.

*A further Inquiry concerning Constitutional Irritation, and the Pathology of the Nervous System.* By BENJAMIN TRAVERS, F.R.S., Senior Surgeon to St. Thomas's Hospital, &c.—London, 1836. 8vo. pp. 444.

It is probable that practical surgeons, at all periods since surgery was cultivated as a science, have been accustomed to reflect on, and to take into account, the effect of local injuries on the body; and, on the other hand, the influence of a faulty state of the constitution on local affections. Close observers could scarcely overlook such marked and evident phenomena; and, in fact, frequent allusions are made by the older writers to these important circumstances. Thus, to take an instance from a surgeon who wrote at a time when surgery was so subordinate a branch of the healing art that he considered it necessary to warn the students of his day "not to rest satisfied with being able to shave, spread a plaster, or open a vein:" we find Heister\* alluding to local injuries producing "symptomatic fever," and, on the other hand, "bad habits of body, as the scorbutic, hydropical, and consumptive," preventing the cure of wounds. To John Hunter, however, we are first indebted for having investigated the subject as a distinct and important branch of surgery; and to Mr. Abernethy the credit is due of extending the practical application of the views of his master, as well as of promulgating much which was original, and, by his influence as a teacher of surgery, directing attention very generally to the importance of the investigation. Mr. Travers is one of the same school; not, indeed, a mere commentator or expounder of the opinions of others, but one who prefers (having the same end in view,) to choose for himself the road which appears to him most likely to lead to it.

\* General System of Surgery.

Mr. Travers has devoted two volumes to Constitutional Irritation: the first appeared in 1827, and has reached a second edition, which, for a work requiring the exercise of considerable attention and reflection on the part of the reader, is a high testimony of the estimation it is held in. The second volume, with which we are now concerned, is introduced with a modesty worthy of the author's reputation.

"I request of my reader to bear in mind, that it professes to be only an 'Inquiry,' seeking and supplying illustration from facts, and reasonings thereupon; not aspiring to guide his views so much as to unfold my own, and thus to indicate the direction in which, as it appears to me, his also may be usefully applied." (*Pref.* p. viii.)

In the former volume Mr. Travers considered that disturbed state of the vital functions usually called constitutional irritation, which is wholly dependent on local injury or operation; he devotes the present volume to the effects of a morbid state of the constitution on local injuries: the first he calls "direct constitutional irritation," the second "reflected irritation."

But, before entering on the detail, it will render the subject more clear if we endeavour to give a sketch of Mr. Travers's pathological principles, and a general outline of the plan of the volume; premising, however, that in the present article we shall confine ourselves to the subject of reflected irritation, leaving the second part, which embraces the pathology of the nervous system, for future consideration.

Mr. Travers considers the nervous principle indispensably necessary to every vital action. Its disturbance constitutes irritation, and, according as it interferes with the properties and actions of other parts, the symptoms of such interference are manifested. As by sympathetic connexion all parts are liable to be consensually affected, local and constitutional irritations are reciprocated. Thus, sympathy may be said (by a metaphor,) to be the carrier, and irritation the thing conveyed. "If an irritation, strictly local in its origin, produce a certain degree of reaction, the determination to the nerves and blood-vessels of the part presents a series of phænomena constituting inflammation." This may begin and terminate in the part, and thus be strictly local, or the local action may be of such a character as to excite the sympathy of the system, and produce fever; and this constitutional irritation may serve a salutary purpose, and be indispensable to the recovery of the part.

"When the injury, from its nature or its seat, is one of extraordinary severity, the constitution is affected to great febrile excitement or depression, as acute inflammatory or typhoid fever, but still presenting the type of fever. In extreme cases, however, as those of complicated injury, although neither involving vital organs nor the loss of blood, it loses that character altogether, and the system is permanently sunk

beyond recovery, or is stunned and prostrated for a time, and recovers only to display new and anomalous modes of excitement." (P. 43.)

This then is direct constitutional irritation, to which Mr. Travers has devoted his former volume. Reflected irritation (with which we are now concerned) "is that in which the system operates upon the part, or upon any remote part, prejudicially, or in a manner destructive to its own safety. This is exemplified in the untoward actions of erythema, erysipelas, gangrenous inflammation, supervening upon injuries; the insidious inflammation of remote parts, as the membranes of the brain, chest, or abdomen, or some visceral disorganization; and, lastly, in the preternatural actions of the nervous system, as trismus and tetanus." (P. 43.)

These two conditions are thus further explained and contrasted:

"Constitutional irritation I consider to be of two kinds, direct and reflected; by which arbitrary distinction I mean to imply, that the first is wholly and immediately derived from the part, commences and is identified with the local mischief, and the constitution has no share in its production. The second, on the contrary, originates in a peculiar morbid state of the constitution, to which the injury or inflammation has given birth, or it may be previously existing. The first is truly symptomatic; never originating spontaneously, and, being immediately induced by the local irritation, is capable of being essentially mitigated or arrested by its removal. The second is occasionally idiopathic, and, being as often the cause as the effect of the local action, is less influenced by local treatment. In the first, the local changes are depending on local causes; in the second, they depend on constitutional causes. Cases are of no uncommon occurrence in which, after an interval, the reflected supervenes upon the direct irritation, or the direct is superadded to the reflected, already established; which may therefore be regarded as examples of mixed irritation, the part and the constitution acting and reacting alternately upon each other." (P. 2.)

We cannot agree with Mr. Travers that the nervous principle is indispensably necessary to every vital action, because vital actions are sometimes carried on (as in the whole vegetable world) without the presence of any nervous system whatever. That irritation, however, is a disturbance of the nervous agency of a part we admit, as the symptoms fully prove it; and it is also most probable that the nerves are the channels through which sympathy takes place. The term irritation, although very commonly employed, yet is used with so little precision, and so mixed up with theory, as to convey different meanings by different authors: it is therefore of importance, in the first instance, for every writer clearly to state what he means by it. It enters largely into, and indeed is almost the foundation-stone on which is built, the physiological doctrine of Broussais, who considered it to be merely an exaltation of the vital action of the part, differing from healthy excitability on the one hand, and from inflammation on the other, only in degree; being more than the first, and less than the second: to irritation, varying.



only in degree, he attributed every morbid change, so that all diseased actions were merely owing to an increase or decrease of healthy ones. Hence the term "physiological doctrine," as applied to the explanation of disease. If we understand Mr. Travers, he employs Irritation (in the true spirit of a Hunterian,) to denote an action which differs not in *degree*, but in *kind*, from any healthy action, or even from the diseased actions to which the term inflammation is applied; and therefore, in the strict sense of the term, a pathological phenomenon, and not a physiological one. In this view of the matter we fully coincide, as well as in Mr. Travers's objection to the attempt made by another celebrated French theorist, whose eclectic doctrines have superseded at present the "physiological" one, to do away with the term inflammation, because, from the vagueness of its application, it has produced error and confusion with reference to processes which are altogether different; and, instead of grouping under one head a certain set of changes as results of inflammation, to study in the dead body only the changes which are produced, and to classify them according to their physical characters. Believing, however, that John Hunter's pathological principles were correct, which accounted for all morbid changes by the perverted actions of the natural and ordinary powers of the parts, we assent to the introduction of the term irritation to express the disordered action of the nerves, as we do of inflammation to express one of the kinds of faulty actions of vessels; and agree with Mr. Travers in believing that irritation and inflammation are distinct actions, although the one often merges in the other. The term "reflected irritation" is a metaphorical one, which serves as a short definition of a phenomenon that would otherwise require the frequent repetition of a more lengthy paraphrase, and on this account (when its meaning is completely mastered,) is convenient. Of course, it throws no additional light on the action itself. Mr. Travers admits that "it is a monstrous evil in science to multiply even synonymous terms;" and, as he has evidently reflected much on the subject, we must give him credit (notwithstanding our dislike of such innovations,) for not having been thoughtlessly guilty of the fault he deprecates.

Mr. Travers enters at some length, particularly in a supplement to his previous chapters, into his own views of the nature of irritation, inflammation, and sympathy, of which we have given a faint outline, dwelling more particularly on the great principles. And let it not be thought that such reasonings are not of practical importance. The deleterious influence of erroneous generalizations, that is, of false principles, in medicine, can be duly appreciated alone by those who have studied the literature of their profession; although, unfortunately, the most superficial observation on what is going on daily around us proves that the same error is hourly committed by those who pride themselves the most on being purely practical, without being at all aware of their own theorizing pro-

penalties, or even by those who never think at all about the matter. What, indeed, can be a more convincing proof of the influence of theory on those who would have been supposed to be the least disposed to be led astray by a disposition to theorize, by all who regard the disposition as the peculiar fault of book-men, than the heating treatment of eruptive diseases. Brandy and water, cradles covered up with shawls and blankets, windows and doors hermetically sealed, are modes of putting into practice that theory to which the ignorant in general, and nurses and other old women in particular, still vigorously cling, of "throwing out the eruption." We will not say that the physiological doctrine of Broussais has had so destructive an influence on human life as this; for it has been embraced by those who, from their education, are more open to the conviction of experience than the less learned and more inveterate theorists we have just alluded to; but that the application of a theory based on the assumption that all diseases are the result of different degrees of development of a physiological action, and therefore require the application alone of various degrees of the same plan of treatment, the antiphlogistic, will strike every experienced man to be fraught with danger, or at least likely to lead to very unsuccessful practice.\* Such being the results of bad reasoning, it is by no means a useless task to test the correctness of any generalizations, whether begotten by the scientific or the ignorant.

The subjects which are treated at length by Mr. Travers, as examples of "reflected irritation," in this volume, are, 1, the unfavorable influence of previous organic disease on local injuries or operations; 2d, metastasis; 3d, secondary inflammations, either in parts adjoining or very remote from the local wound or injury; 4th, morbid growths independent of inflammation, and only arising in certain habits of body; and, 5th, inflammations, as erysipelas and gangrenous inflammation, often excited by wounds and injuries, but of which the origin and progress are strictly indicative of a faulty state of the constitution.

The consideration of these subjects is preceded by a few observations on the influence of constitution and habits in predisposing the body to disease. Mr. Travers believes that, "as there is no human condition free from trouble, so there is not an individual in existence who has an organization of equal perfection;" and that this fault of the constitution has been "both acquired and accumulated by the unceasing operation of deteriorating causes upon the human

\* That it was so even in the hands of its gifted founder, is unfortunately shown by a table of the mortality at the Val de Grâce during several years, where the relative mortality in the wards of M. Broussais is compared with that of his more old-fashioned colleagues, which will be found in a work entitled "*De l'Irritation et de la Phlegmasie, ou nouvelle Doctrine Médicale*, par V. Prus, p.m. 1825." This work is curious, from its containing no reference even to John Hunter's name, although it was a Prize Essay on Inflammation, and more Hunterian in its principles than most of those emanating from the French schools.

body, from which our first parents were as far exempt as was compatible with the condition of perishableness by age and slow decay." The most influential predisponents to disease are "of the time of life, youth or age; of temperaments, the scrofulous; of habits of life, those of poverty in the aggregate; of moral causes, anxiety and the depressing passions; of external and adventitious circumstances, the abuse of liquor, the operation of cold, and the action of mercury. But it is in combination that these latter, which may be called occasional causes, act with most fatal severity." (P. 9.)

1. *Pre-existing Organic Disease.* Mr. Travers considers that a change from the normal structure, on account of the insidiousness of its origin, is often overlooked. He is inclined to think, however, that such changes of structure exist more frequently than is supposed.

"Upon examination of the bodies of persons dying from disease or accident after the middle of life, it is rare not to meet with some palpable evidences of organic change not previously known, or at best only vaguely surmised to exist. I could cite many instances of this, and also of chronic states of disease, explaining the adverse results of operations, contrary to the expectations of the surgeons. Diseases sometimes lie hid, as if they had by slow induction and encroachment injured the system to bear with them; or the symptoms have been masked, perhaps neutralized, by combination with others. I have known a stone in the bladder discovered after death in the body of a man otherwise diseased, in whom no complaint during life had led to a suspicion of its presence.

"On the other hand, the pain attending some very slight and superficial morbid change is sometimes excessive, and very difficult to comprehend.

"The extent to which the deterioration of organs, as life advances, is evinced in their interstitial deposits and general loss of transparency, sharpness, and firmness of texture, constitutes a sort of microscopic morbid anatomy, which for the most part escapes observation. It is most perceptible in the bodies of persons of middle age; the cases of premature decay, in which people are vulgarly said 'to die of a broken heart.' Anxiety and alcohol are the chief exciting causes, especially when, as too often happens, they co-operate. The effect is a preternatural flaccidity, or general loss of tone, with effusion from the extreme vessels. This slow and silent work of deterioration begins earlier in some constitutions than others, and varies in families as in individuals, notwithstanding wide differences in the habits and modes of life, as if from an original conformation; and it is thus we must account for the well-known and well-established fact, that, barring accidents, the general duration of life tallies in families, with few exceptions,—some reaching threescore years only, others five years over that, and others, again, reaching seventy, and from thence longevity." (P. 11.)

Mr. Travers justly remarks that we are often restrained from offering the chance of operations by the actual demonstration of internal disease. He refers to instances of fatal results having

followed trivial operations, which can only be explained on the supposition of the existence of some visceral disease.

"A morbid condition of the lungs or liver, and effusion into the chest or upon the brain, have generally been indicated in such instances. In other cases, however, where examination has been obtained, no actual change has been detected beyond a gorged condition of the blood-vessels of these organs, partial depositions from their extremities, opacities, and old adhesions of the lining membranes, extreme flaccidity of the muscular fibre, &c." (P. 13.)

We believe that few practical surgeons will be inclined to dissent from the truth of these observations. That organic disease to a great extent may exist, and yet furnish no indication of its existence by symptoms during life, will be readily acknowledged by all who have directed their attention to necroscopic examinations. In the works of various pathologists instances of the same kind may be found; and Mr. Travers refers to a case of stone in the bladder, which was never suspected to exist during life. Andral, in the fifth volume of his "*Clinique Médicale*," mentions cases of softening of the brain, only detected at the post-mortem examination. These, and similar instances of every-day occurrence, should only lead us to prosecute with more industry our pathological and semeiological investigations. The fatality of relying on the appearance of symptoms alone must now be generally acknowledged, and the importance of combining them with physical signs, whenever these latter can be detected, must also be granted by every one who has attempted to arrive at a just diagnosis of disease. We have only to look back a few years, before the works of Laennec and other pathologists appeared, and contrast the state of knowledge at that period with respect to diseases of the internal cavities with what it is at present, and we shall be at once sensible of the advance of modern medicine in this particular. The investigation of the physical signs of disease may be considered to be yet in its infancy, and we may hope, from what has hitherto been done in this way, that the art of diagnosis may be able to reach a much higher state of perfection than could have been anticipated even by its most sanguine cultivators. The importance to the surgeon of being able to detect visceral disease previous to an operation, we shall presently have occasion to refer to.

Four cases are given by the author as confirmatory of his opinion that the fatal result of surgical operations is the consequence of existing changes of structure in some of the internal organs. In the first case, sloughing of the cellular membrane of the scrotum followed from puncturing a hydrocele, and death took place the twenty-fourth day after the operation. The fever which accompanied this local affection began on the eighth day after tapping the hydrocele. The patient had been in the habit of drinking porter daily to excess. The post-mortem appearances were—sloughing of the tunica vaginalis; the testes and cord were sound, with a

small hydrocele of the latter. There was a gorged condition of all the viscera; the liver was brittle and granulated. Some chronic adhesions were found in the chest. In the second case, peritonitis followed by death took place from tapping an ovarian dropsy. On examination, a small fungus, of malignant aspect, was seen sprouting from the enlarged and hardened substance of the right ovary. Death followed the opening of a bursal abscess in the third case, the subject of which was a girl, aged eighteen, an epileptic. On examination, the affection was found to be confined to the bursa. The mucous membrane of the bowels was ecchymosed in several places, the right lobe of the cerebellum was morbidly soft, and about an ounce of blood was shed over the surface of the left hemisphere of the cerebrum, beneath the dura mater. In the last case, a large muscular man received three contused wounds in the scalp. He died on the ninth day from the accident; and, on examination, the wounds were found in a state of slough, with the surrounding integument thickened. There was no injury to the tendon, pericranium, or bone. The pia mater was very vascular, and the sinuses were turgid; the arachnoid was transparent, from a copious effusion beneath it. Old pleural adhesions were found in the chest, and the right lung was filled with tubercles.

Whether the organic changes detected in these examinations were sufficient to account for the untoward result of the operations must be left to the judgment of individual practitioners. In some of them we should be inclined to doubt it. Most surgeons of experience must have met with similar cases in practice, and it is very probable that, if diligent examinations were made, changes similar to those mentioned by Mr. Travers would be found. The deposition of tubercles in the lungs or intestinal canal is, in particular, too often overlooked by surgeons; and yet it can be easily shown that, if they exist to any extent, no rational hope can be entertained that a serious surgical operation will be attended with success. The removal of a local disease by a sudden sweep of the knife, so far from arresting, often materially contributes to hasten, their deposition. Minute ulcers of the gastro-intestinal mucous membrane may so depress the vital power as to render the constitution too irritable to accomplish the functions necessary for the restorative process after great operations: or some organic disease of the heart may exist, which will render it hazardous to amputate a limb, and thus compel the heart to circulate an additional quantity of blood.

2. *Metastasis.* Mr. Travers considers the principle of metastasis to be the same as sympathy, of which he gives a very curious proof.

"If a child dies at the seventh month; from the period of its death, though the woman be not delivered for days after, the mammæ are furnished in the same plenitude as if the child was born and alive. Now this is directly contrary to what writers on Midwifery have generally

asserted, viz. that the falling of the breasts, and the failure of the milk, are never-failing signs of the child's death. This was misplacing the sympathy, the secretion being determined not, as this statement would lead us to suppose, by the life of the fœtus or the birth of the child, but vicarious with the diminished supply of blood to the womb on its death, or after delivery. Nature never contemplates death; and therefore, when the blood of the uterus ceases to be demanded, the child, in the language of sympathy, is born, and the want of the born infant is supplied." (P. 18.)

The most marked examples he has seen of metastasis are serous apoplexy, from retention of urine and the sudden reduction of swollen testes; palsy of the retina, from a sudden retrocession of a skin-rash, from a tumour obstructing the bowels, the irritation of worms, engorgement of the liver, and suppressed catamenia; and erythema, erysipelas, and even diffused gangrenous inflammation, from the healing of wounds upon distant parts.

With respect to metastasis, it has been observed that it frequently occurs in structures analogous in their anatomical elements to those primarily diseased; as in the case of pericarditis following inflammation of the fibro-serous membrane of the joints, &c. In three of Mr. Travers's cases, what he has supposed to be a metastasis arose from the healing of cutaneous ulcers or abscesses of the integuments, followed by affections of the mucous membrane either of the abdominal or thoracic cavity.

It seems to be a prevalent opinion that the older writers were disinclined to heal up old ulcers, from a fear that constitutional mischief should follow, rather on theoretical grounds based on the humoral pathology than from experience. Such being the case, the instances given by Mr. Travers are worth consideration. The history of some of these cases is too cursorily given, and so much difficulty hangs over the whole subject that they do not strike us as altogether conclusive instances. Some doubt, we think, must be felt by all as to the propriety of classing the following case under this head.

"A man who had a thecal and palmar abscess of the hand, following a puncture of the ring-finger, and was recovering a partial motion of the fingers, the tumefaction having subsided and the discharge nearly ceased, was attacked suddenly with acute inflammation of the chest; which resisted active treatment, and proved fatal in nine days." (P. 20.)

The following case appears to us much more conclusive.

"A gentleman, of dissipated habits, had a great parenchymatous enlargement of both testes, for which he applied a suspensory, and a strong solution of acetate of lead. The volume of the testes was suddenly reduced, and he was as suddenly attacked with a fit, resembling apoplexy: he never perfectly recovered, and eventually, though some years afterwards, died of a return of the stroke." (P. 22.)

**3. *Diseased Actions set up in other Parts by Injuries and Inflammations.*** The late Mr. Rose, of St. George's Hospital, was

the first who particularly directed the attention of the profession to the frequency with which large collections of matter, consisting partly of whitish lymph and partly of pus, are found after death following a severe operation or injury. These abscesses are most apt to form when the parts in which the injury took place are in a state of suppuration, and in particular when, from the nature of these parts, after the confinement of the matter, great irritation of the system has been kept up; and it often happens, as *Bertrandi* remarked, that they have not been suspected during life. *Desault* had previously pointed out the frequency of abscess of the liver following injuries of the head. "Two possible sources of fallacy," says *Mr. Travers*, "are so obvious, that it is scarcely necessary to point them out. The first being *Richerand's* mode of explaining it, viz. the consentaneous injury of remote parts; secondly, the previous existence of disease. For the first, the physical impossibility of the occurrence in the majority of cases, and, for the second, the previous absence of symptoms, are sufficient to silence scepticism." We are not disposed to be over-sceptical, as there are too many cases on record of considerable deposits of matter in various internal organs succeeding operations, to allow of hesitation in admitting that the two are in some way connected as cause and effect; but we think that these explanations are of more weight than *Mr. Travers* allows, and in many cases may partially account for the phenomena. In the case of a fall on the head, for instance, we can scarcely say what injury the internal viscera may at the same time receive. We know, at all events, that the liver, in consequence of its friable structure, has been ruptured from injuries of the abdomen, the integuments remaining entire; a point which is much insisted on by *Cruveilhier* in his pathological investigations: and that *Mr. Travers* should rely on the absence of symptoms as being decisive of the non-existence of disease, appears to be at variance with his previous observations, in which he dwells particularly on the fact that organic disease may exist without symptoms, and gives in illustration an instructive case.

Granting, however, that the internal abscess is the effect of the operation, we have still to enquire on what the choice which was made of the peculiar organ for the purulent deposit depended. As it regards abscess of the liver following injuries of the head, *Mr. Travers* accounts for it by the well-ascertained sympathy between the two organs. Still, however, as it does not take place in all cases, nor in the same organs, we must further look to some local cause for the action in the viscus; and this may be either some organic peculiarity or some inherent disposition to disease, which in some cases may have been produced by simultaneous local injury. In other cases, organic disease previously existing, without external symptoms, may determine the situation of the secondary abscess.

As the investigations of pathologists since the time of *Rose* have

increased the accuracy of our knowledge of these secondary purulent deposits, we regret that Mr. Travers takes no notice at all of them, except in a short passage at the latter end of this part of the volume, (p. 222,) in which he seems altogether to reject them, as destitute of credit. There may be much that is crude and hypothetical in the explanations in which some of these pathologists have indulged, but we may gather from their united observations that there are two distinct conditions of the parts surrounding the purulent deposits; one, in which there is complete absence of vascular congestion, lymph, induration, and softening of the surrounding tissues, the pus being collected in the natural texture of the part; and another, in which the tissues in contact are softened, or ulcerated, or covered with layers of lymph. Another fact, too, has been fully proved by them, that in nearly all these cases pus has been found in the veins of the part affected. There are therefore good grounds for the inference that pus may be absorbed by the veins, and carried to and deposited in a part previously (as far as appearances go) sound, or that the pus circulating with the blood may, together with other causes, induce suppurative inflammation in remote organs. From the same sources we learn that the lungs and the liver are most frequently the seat of these accidents, and the kidneys least so of all the internal organs; but, that Dessault's opinion, that they are found in the liver more often after injuries of the head than of other parts, is not correct. This being the case, we can hardly assent to Mr. Travers's theory of the natural sympathy between various organs, directing the seat of the morbid process, which seemed a probable explanation of Dessault's observation. The fact of the infrequency of the disease in the kidneys appears to militate against the influence of sympathy; for these organs are in intimate sympathy with the skin, a texture which is seriously involved in all operations. Although the first opinion expressed in the following quotation is questionable, yet the observations on chronic diseases supervening on injuries are highly judicious.

"The natural sympathy is equally remarkable, in most cases, between the brain and liver, whichever organ is first affected, and explains why this is the most frequent, and was the first-noticed instance; but the partial symptoms vary in individuals according to their temperament and habit; so that, in a person of phthisical diathesis, the weight of the injury would fall upon the lungs, whereas, in one subject to hepatic congestion, it would probably fall upon the organs included in the system of the vena portæ; but the variety of the casualties and the diffusedness of the mischief plainly show that, in the case of recent injury, it is by the medium of the universal sympathy that the site and extent of the morbid action are determined. But the result is not limited to recent acute injury; it is a chronic state of continual occurrence. Let any candid observer watch the progress of white swelling, of scrofulous swelling of the testis, of slow and extensive glandular swellings of the neck and



groin, which suppurate deeply and imperfectly, of psoas and lumbar abscesses,—and, in short, of all such local diseases as have induced a chronic cachexia, and keep up an habitual hectic,—and he cannot fail to observe their tendency to produce visceral disease. If the case be one which admits of a palliative plan, and occurring in a child, he will probably see it sink into phthisis at puberty, or, by dint of incessant watchfulness, live a cripple and exotic. If the state of the part demands amputation, and over-anxiety to preserve it leads to a postponement of the operation beyond a certain time, the hectic continues, and the system succumbs before the wound is healed, instead of instantly rallying, as having cast aside its burden.

“The cavities or viscera of the chest or abdomen will invariably be found so diseased as to have precluded the possibility of recovery. Sometimes effusion on the brain with tubercles of the lungs; in other cases, purulent effusion in the chest or belly; mesenteric abscesses, or such patches in the liver or spleen as Mr. Rose has described; or complicated morbid changes produced by adhesions between contiguous surfaces and adventitious membranes, are found, forming insulated pouches or nests of matter, communicating by ulceration with the substance of the lungs, or some part of the alimentary tube, or the kidney and urinary bladder. \* \* \* It would be as impossible to comprehend in a description the varieties of external disease leading to them as of internal changes produced. It is enough for my purpose to lay down as an axiom the fact, that the hectic produced and maintained by sympathy with an external disorganization long enduring, as, for example, a diseased knee or ankle-joint, becomes an exciting cause of various structural changes in the visceral organs, and offers the best apology for early, the strong objection to late, operations.” (P. 29.)

These practical remarks are especially valuable when taken in connexion with the discoveries of M. Louis (to which Mr. Travers does not allude,) on the deposition of tubercular matter in internal organs. We refer particularly to the fact, so completely established by M. Louis, that tubercular formations, when detected in any of the internal viscera, are always found (except in young children) at the same time, and in a more advanced stage, in the lungs. Although the remarks of Mr. Travers are destitute of the numerical precision of the French pathologist, yet to a certain extent the former corroborates the latter; for, without admitting Mr. Travers's explanation that the external disease is the exciting cause of the internal, we have the fact itself that, at a certain period, the two affections are coincident; and, in a practical point of view, we shall endeavour to show that this coincidence is of importance. It is to be regretted that we are still deficient in more precise information on the surgical pathology of tubercular deposits. We have yet to learn the exact relations between the external deposition of tubercular matter in the glands of the neck and groin, in the ankle and knee joints, in psoas abscesses, &c., and the internal deposition in the lungs, mesenteric glands, &c. We cannot yet satisfactorily confute or confirm the vulgar opinion that the mere external deposit of strumous matter, as in the

cervical glands, prevents the disease from "falling on the lungs." The extreme difficulty of detecting early tubercles in the viscera during life, and the infrequency of opportunities of examining bodies in which death takes place under such circumstances as to preclude the possibility of the fatal disease acting as an exciting cause of tubercles, render the solution of this problem very difficult. The examination of those cut off by accidental death whose glands were enlarged, or joints affected with strumous disease in an early stage, would, if collected in sufficient numbers, supply valuable matter; and that in process of time such data will be collected, we think may be expected from the attention which surgeons now pay to internal diseases: but, until we have such information, we hardly think that the truth of Mr. Travers's "axiom" is proved, although, as a general rule, the advice it contains is judicious, and would have been much more so, had Mr. Travers taken more extensive views of tubercular formations. And this is an instance of medicine and surgery being, in theory and in practice, one and indivisible. The discoveries of M. Louis prove that in the lungs is to be sought the maximum of internal tubercular disease in all cases; and Mr. Travers has shown the coincidence, in advanced stages, of the external tubercular deposition with the internal. In all cases therefore of external scrofulous diseases which demand operation, the state of the lungs should be most carefully examined by physical means; and the evidence afforded, when taken in connexion with the other symptoms, should guide the prognosis. Every surgeon must have observed two sets of cases: one, in which the removal of the scrofulous knee-joint in an emaciated subject has been followed by the speedy disappearance of every bad symptom, and rapid restoration to health; and the other, in which the operation has been followed by an aggravation of all the bad symptoms, and death. The physician explains the difference by the fact, that, in the one case, the general symptoms were the product of mere local disease; and, in the other, of local disease together with a similar internal scrofulous disease, most probably of the lungs; symptoms which it is almost impossible to unravel and fix the due value of, unless by the aid of minute examination of the internal organs, and particularly of the lungs, by the assistance of physical examination of the chest. In the former case, there may indeed be tubercles in the lungs, which announce themselves by no sign; but it may be presumed that, on the removal of local irritation, these will remain in that latent state which seems to be compatible with many years of life, although of delicate health, still of usefulness and enjoyment.

In illustration of inflammation set up in other parts after operations and injuries, Mr. Travers details several cases. These are divided into instances of contiguous and of remote inflammation. As instances of remote inflammatory action, he gives cases of, 1st, pericarditis from a suppurating wound of the scalp; 2d, peritonitis from amputation of a leg for a fungoid tumour; 3d, and

4th, phthisis after ulceration of the cartilages of the knee-joint, and after as severe injury of the ankle-joint; 5th, adhesions of the pleuræ in inflammations and ulcers in the stomach, with enlarged liver, after a penetrating wound in the head by a nail, which was followed by caries of the os calcis.

In the third and fourth cases, where death took place from phthisis, we are not furnished with any particulars as to whether the chest was examined on the admission of the patients, or whether the individuals presented any local or constitutional symptoms of phthisis when they received the injury, or were attacked with disease of the joints. Some doubt also hangs over the last case, from the fact of ulcers in the stomach often existing without producing any marked symptoms.

These cases of organic disease supervening on local injuries, and producing death, are instances of what Mr. Travers terms direct superadded to reflected irritation; and under this head are to be classed nearly all the protracted cases of surgery. The local disease, by its constant irritation, produces a faulty state of constitution, and tubercular or other depositions in the lungs or other viscera is the consequence of this "reflected irritation," which depositions become in their turn causes of direct irritation.

"It will be obvious to reflection, that the direct irritation ensuing upon injury or inflammation tends, if continued, to the production of the state of constitution above described; as, when the injury, which acts as an exciting cause, though soothed, is unredressed, and the system is, by the aid of time and circumstance, restored to seeming tranquillity, though still oppressed by a sense of inequality to sustain the demands made upon it for support and repair. In this critical position, it continually happens that the constitution of the robust, which is unused to confinement, and of the weak, which is scarce adequate to maintain health, betrays a condition of morbid irritability which impedes the process of recovery, and lapses sooner or later into a wasting hectic, generally producing pulmonary or other visceral deposit. In those chronic changes of structure which arise independent of any assignable local cause, some of which we denominate constitutional diseases,—as, for example, scrofula, scirrhus, &c.,—a similar passive morbid state of the system is gradually established, which, if aroused by any suddenly altered condition of the part, frequently assumes a degree of activity destructive to life. The irritation of a change, abstractedly beneficial,—as, for example, the removal of a tumour, or of a limb which we have vainly attempted to save, or the discharge of a large abscess,—annihilates the benefit which, in different circumstances, it would have afforded. Had not the powers of the constitution been already overstretched, they would have rallied on the occasion, as they have often done from a state of almost hopeless depression; but the shock incidental to the change of condition oversets it, so exquisitely delicate has the balance become by gradual adjustment between the weight imposed and the sustaining force. If fatal results are exceptions to general experience, it is because experience has impressed caution; but they occur; and it has appeared to me that a

more distinct solution of the question, why they occur, than has yet been given, may render them still less frequent.

"This, then, is the case of the direct superadded to the reflected irritation; so that the reciprocity of the two is evinced in almost all protracted cases of surgery, and indeed their protraction is generally depending upon it. In a case which goes healthily forward without interruption, the constitution and the part preserve their adjustment so equally, that irritation can scarcely be said to exist; and this is the case when, after the first alarm and resistance of the nervous system is past, the circulation quiets down and lends all aid to the work of reparation. But, when permanently unfavorable circumstances attend an injury or a disease, an ill-disposed habit or a cachexia is present, a previous organic change exists, or an interference takes place with the operations of nature, whether accidental, unavoidable, or ill-judged, (each of which causes comprehends a variety of conditions in detail,) the part and the constitution are alternate irritants, one of the other, and eventually co-operate for destruction." (P. 44.)

From the cases given to illustrate the superaddition of the direct to the already established reflected irritation, we select the following:

"A young lady, a native of the West Indies, receiving her education in this country, became my patient some years ago for a painful affection of the knee-joint. She had been for some time confined to her sofa, and had tried liniments, local bloodletting, and the various applications in ordinary use.

"Finding the pain obstinate, I opened a large blister, fairly removing the cuticle over the joint, excepting only the part covering the patella. The suppurative inflammation was readily established, and the secretion abundant. The constitution very soon showed signs of great weakness and distress; nausea and fever followed. She complained of excessive soreness of the part; the raw surface began to ulcerate deeply, and the granulations turned sloughy. Mild cerates and poultices, which had been substituted from the time at which the sore became inflamed, the solution of opium, and other anodyne fomentations, were of no avail to arrest the sloughing process, which completely exposed the ligaments of the joint. The discharge ceased, and the surface presented an appearance resembling dry gangrene. Opium, ammonia, sarsaparilla, bark, and the other remedies adapted to sooth and support the system, with a careful administration of cordials, were employed to no effect: a state of extreme prostration and irritability ensued; the integument of the sacrum took on the same condition; she became typhoid, and died about three months after the application of the blister.

"The West Indian constitution is one of feeble powers: though from her infancy inured to this climate, this young lady was of slender frame and strumous diathesis; she had suffered in health from the confinement, being incapable of standing and of moving the joint without pain. The destructive process was similar to what is more frequently seen in weakly children. It is the only case in which I have seen a blistered surface fall into gangrenous phagedena in the adult." (P. 53.)

The next division of Mr. Travers's work embraces the conside-

ration of local changes of structure not essentially inflammatory, and of the peculiar states of constitution, or cachexies, on which they depend; on which account they come under the head of "Reflected Irritation."

Mr. Travers believes that we are too much accustomed to consider every change of texture, or deposition, a result of inflammation; and that, to account for the different products, we make out not only acute, sub-acute, and chronic, but scrofulous, scirrhus, rheumatic, gouty, and venereal inflammations; to each of which a peculiar action is assigned. But

—"inflammation is in itself the same, although its character and products vary according to the influence exercised by the constitution, and the term specific is used to designate such actions as are characteristic of a certain previously existing state of constitution, and peculiar to it. Admitting this, I contend that many effusions, depositions, and absorptions, both simple and specific, are in no degree inflammatory." (P. 66.)

The misconception has principally arisen from the circumstance of inflammation being superadded to such changes in the progress of disease.

"When a lymphatic gland, instead of its proper pulpy texture of a greyish brown colour, is found to consist of a firm suety substance, or to contain a white curd-like fluid; or when the proper texture of the testis is so converted, with a very moderate or no increase of bulk, and preserving its uniformity of figure; when there is neither pain, heat, nor redness, nor any sign of increased vascularity, nor any discoverable derangement of health, what reason have we for considering it as inflammatory action?"

"How are we to reconcile the phenomena of many dropsies, as of the cellular membrane in simple cedema and anasarca, of congestive ascites, of transparent hydrocele, hydrops articuli, of adipose and fatty tumours, and steatoma, and such sebaceous cysts as those common to the face and hairy scalp, with the idea of inflammatory action?"

"Inflammation doubtless may give origin to these and similar changes, as it produces an opacity of the crystalline lens, although the cataract in the ordinary form of the disease is wholly unconnected with an inflammatory process; and this in proportion to the former species is more frequent.

"The elementary structures of scrofula and cancer are themselves produced independent of inflammatory action, and are strictly speaking incapable of the production of adhesive lymph or pus; it is only when inflammation is superadded to them that secretions at all resembling these are formed." (P. 68.)

If a cyst containing a glairy fluid, which has been attended previously with no inflammatory symptoms, is opened, or becomes inflamed by distention, its secretion then becomes mixed with the true products of inflammation.

Neither morbid secretions nor slow alterations of structure, improperly termed "chronic inflammations," if unattended with

the acknowledged evidences of inflammation, can be properly said to arise from it. Indolent tumours, in general, whether solid or fluid, give no such sign.

"The origin, there can be no doubt, of these swellings and collections is due to a distinct series of actions, the obstruction or deficient action of absorbents, or the preternatural out-pouring of the excretory and exhalent capillaries from congestion of the venous circulation and other causes." (P. 70.)

The sections of all varieties of solid tumours, the adipose, sarcomatous, mammary, osteo and fibro-sarcomatous, warts, condylomata, tubercle, medullary, hematoid and melanoid fungi, present such varieties, and such an entire absence of every symptom and ordinary-product of inflammation, that they can only be regarded as the results of a morbid irritation, whether with excessive or defective action of the capillaries of the part. In a large proportion of the cases of changes in the solids of the body inflammation is not an antecedent but a consequent, and either excited by distention or the falling together of parts from loss of substance and support. The antecedent is local irritation, the consequences of which, when the system is in health, are "for the most part simple and unimportant. If inflammation supervenes, it runs its course, and leaves the part unimpaired. But it is not so if the system is either not in present health or not a healthy one by temperament or circumstances, as in the scrofulous or cancerous diathesis. And thus the very trifles which are utterly disregarded by some persons, in others form the fuel, or kindle the flame, of incurable maladies." (P. 75.)

"The symptoms which attend upon these chronic changes are a sensation of general malaise, languor, and lassitude, wandering pains, unequal distribution of blood and heat, uncertain rest and appetite, gradual decline of muscular tone and power, and perhaps of flesh, variable secretions both as to quantity and kind, and an uncertain state of the temper and spirits. These are the signs of irritation from chronic change, and are indicative of the state of the system which has given origin to the morbid action as much as of its effects. I call it, therefore, reflected irritation.

"The cases of extensive chronic change, which, unconnected with a specific diathesis, endure for years, causing great inconvenience and great deformity, without producing one constitutional symptom of a truly inflammatory character, form a very large class of surgical diseases. But, when the state of inflammation supervenes, and leads on to the institution of the hectic paroxysm, thenceforward the wear and tear becomes destructive; and, unless the cause admits of speedy removal, it is not the external malady to which our attention and our fears are directed, so much as to the organs which support life, especially the lungs.

"The irritation of the constitution is barely perceptible in the early stage of the specific diseases. In scrofula, in all the varieties of cancer, in the numberless tumours and ulcers which have no obvious and direct

local cause of origin, the constitution which has given birth to them being predisposed to their formation, discovers little sympathy with them when formed. The seeming exceptions to this observation are those set up by violence, or whose situation interferes with the structure and function of vital organs,—as tubercles in the lungs, brain, stomach, or liver, for example.

“Then the irritation becomes direct, and sets up fever, which rapidly proves destructive; for reflected irritation, if left to run its course, is slow in comparison with the direct, which, though originating in some purely local cause, acts, as we have seen, with such intensity as to excite the instant sympathy of the brain and stomach, and thence of the universal nervous system.” (P. 75.)

Mr. Travers further illustrates the proposition of inflammation supervening in constitutional diseases by a reference to the phenomena of specific diseases. Thus, the tumors of scrofula, and the scirrhus tubercle, are not generally painful until they take on inflammation. The venereal poison is introduced into the system by means of an inflammatory process, often very trifling, and it is by the inflammation of distant parts, (as eruptions, sore-throat, ophthalmia,) modified by the poison, that its presence in most cases is demonstrated. This, then, is a proof “of a morbid state previously existing, an irritation reflected from the system upon the part, and shewing itself in the specific type of its inflammatory changes.”

Mr. Travers believes that a morbid poison received into the circulation will sooner or later show itself in an external form; but, independently of that, it will give notice of its existence by a visible decline in the functions of health. Nevertheless, he conceives that “a man may die of scrofulous or venereal irritation and atrophy, without an external or local sign demonstrating its interference with the vital economy.”

“I consider inflammation specific, in being subordinate to the specific irritation; and, when this is the case, it is of a chronic character, and circumscribed, as in the scrofulous white swelling, in the scirrhus tumour of the mamma, in a genuine syphilitic ulcer of the glans penis. If the action is rapid and vehement, and threatening extensive disorganization, we may be sure it is the work of some other agent in combination, as, to take the last example, a state of high inflammation from neglect, or venereal abuse during the existence of sores; confinement of matter, as in perfect phymosis; intemperance, or the previous employment of mercury in frequent irregular courses during unrestrained exposure to weather. The same remark applies to venereal ulcers of the throat and external skin, to eruptions, nodes, venereal ophthalmia: take away the susceptibility to inflammation from exposure and other incidental causes during the excitement of the system by mercury, and the severe local consequences referred to the action of syphilis would be no more seen.” (P. 80.)

The above remarks are highly important, and should be well considered by every practitioner. The complications every day

met with in the treatment of syphilis, we believe, in a great measure will be found to depend on inflammations supervening on the original affection. That, in the syphilitic subject, as Mr. Travers states, irregular living, a blast of damp air, or chilling the surface, will give rise to an inflamed iris or ulcerated throat, or nodes, with blotches on the skin, we are not exactly prepared to affirm; but, as a general position, we agree with Mr. Travers in thinking that injudicious treatment, intemperance, cold, &c., are the real causes of the various complication of the diseases above alluded to. We are aware that the term specific inflammation is objected to by many, particularly by the disciples of the French school; but, as the author observes, the liability of particular textures to be affected with particular inflammations affords a strong ground for the propriety of dividing inflammation into specific and simple; particularly when some of these inflammations are found to be more within the influence of certain remedial agents than others.

Mr. Travers states that there is another view in which the specific diseases deserve to be regarded. In this view a constitutional disease may have indirectly a local origin, and that one of simple inflammation. He takes scrofula as an example, and observes that "the habit most alien from it may be rendered truly scrofulous in three months, by a combination of such causes as will produce that state with a local casualty. An impoverishing system of diet and medical treatment, a vitiated atmosphere, with bad nursing and neglect, or mistreatment of the local malady, will, and often does, effect this among the poor."

"Thus, it continually happens that the labourer works upon a strain or a wound, which, with rest and attention, might have been permanently cured, until, by extensive local disorganization and loss of health, he is forced to seek parochial or hospital relief. With great attention, the local disease assumes a favorable condition, and is approaching a cure, when the increased emaciation, sloughs of the sacrum, or trochanters, the small cough and flushed cheek, uncountable pulse, frequent diarrhoea, and profuse sweats, show that his lungs are irrecoverably diseased; and thus the whole career, from full health to the grave, is run within a twelvemonth." (P. 83.)

Mr. Travers next considers the state of the constitution resulting from the operation of specific diseases, "which has been well denominated cachexia, and which is, in fact, the peculiar action engendered by the specific disease, retaining the distinctive character which that possessed."

The usual acceptation, we believe, of the term cachexia, has been that in which Dr. Clark applies "tubercular cachexia," to denote certain symptoms marking a general faulty state of the whole constitution, which is the remote cause of the deposition of tubercle, and which results from the operation of certain external or internal agents, as a close atmosphere, damp, bad food, &c.

In mercurial and syphilitic cachexia, the general faulty state of



the constitution is produced by the circulation of a morbid poison. Mr. Travers must therefore use the term "specific diseases" in a sense peculiar to himself, or he must understand by cachexia that condition resulting from the actual development of the disease, (as from softened tubercles,) and not preceding it. If the latter is his meaning, we must dissent from it; as the general condition on which tubercles or carcinoma, for instance, depend, appears to differ only in degree from the state of the body after these diseases are developed; that is, it is less marked. To us the definition appears obscure.

Mr. Travers thus classes Cachexiæ:

"SIMPLE CACHEXIE.

Suppuration.

Ulceration.

Gangrene.

SPECIFIC CACHEXIE.

Scrofula.

{ Scirrhus Cancer.

{ Lupus. Sweep's Cancer.

{ Medullary Cancer.

{ Hæmatoid. Melanoid.

Animal Poisons.

{ Syphiloid.

{ Varioloid.

&c. &c.

Mineral Poisons.

{ Mercurial.

{ Arsenical.

&c. &c." (P. 90.)

Suppuration taking place in the nates, around the anus, in the groin, axillæ, &c. in broken-down constitutions, is a form of cachexia, and the greatest benefit is obtained by well-applied rollers.

Ulcerations, particularly of the extremities, is another example of cachexia, and in hospitals the effects of rest, pure air, and good diet, strikingly show their dependence on constitutional causes.

Gangrene, sometimes following the slightest accident, and independent of a diseased state of the heart and blood-vessels, is also a sign of cachexia from depressing causes.

Of the specific cachexiæ, the scrofulous is well known. The medullary cancer, according to Mr. Travers's views, which appear highly probable, is the cancer of scrofula.

"The constitutional changes which more particularly characterize the syphilitic cachexia are, the reduced flesh and tone, the loss of complexion, activity, and vigour; the frequent rheumatism in various parts of the body, especially the head and chest; sensibility to cold and damp weather, and small febrile paroxysms in consequence of exposure. The digestive organs are very feeble, and the breath and perspiration have a tainted odour. Mercury, it may be said, has much to do with the pro-

duction of this cachexia: as an aggravant, I do not deny this to be frequently the case, but not as an element.

"The mercurial cachexia is characterized by irritable circulation, extreme pallor and emaciation, an acute and rapid hectic, and an almost invariable termination in phthisis." (P. 87.)

The whole of this chapter, as well as the numerous cases which illustrate it, will be found to be full of instruction and interest.

An example of mercurial cachexia is related, of which the subject, a respectable married woman, had been for ten months a patient in a country dispensary. Her mouth and nose had been in a diseased state for a period of fifteen months. She invariably declared that she never had the venereal disease in any form, but had been incessantly taking mercury. A round excavated ulcer existed in the middle of the soft palate, and another of a similar description on the inner surface of her upper lip. Several small portions of bone had come away whilst she was under the influence of mercury. She was at first ordered two grains of quinine three times a day, with a lotion of nitrate of silver. This treatment was continued for three weeks. The ulceration somewhat extended, and she suffered from pain in the ulcers and headach. The blue-pill combined with opium was given, and porter was allowed, and for a short time with seeming benefit; but in about a fortnight it was evident that the disease was assuming a malignant character, and the medicines were discontinued. For five or six weeks more, the ulceration continued to extend, and the patient's health gradually declined. It was then determined to try the effect of the alterative and tonic action of mercury in this form:—R. Hydr. Oxym. gr. iij.; Micar. panis, ʒj.; p. Conii, ʒj.; Aq. dist. q. s. M. et div. in pil. xxx. e quib. sum. j. ter quotidie.—Extr. Sarsap. ʒss.; Dec. ejusdem, ʒxvi. M. cap. part. 3<sup>a</sup> c. sing. pilula. She was at the same time ordered to leave off every application in the form of lotions, and apply dry lint to the ulcerated surface on the lip, and over that to make gentle pressure with strips of adhesive plaster, just sufficient to support the edges. The effect of this trial was decidedly favorable, and in about a month she left the hospital well in health; the lip, as might be expected, not quite possessing its natural appearance.

Mr. Travers considers this one of many cases in which mercury had been largely used, under a mistaken idea that the affection was venereal; whereas, it was originally a simple inflammation of the membrane lining the roof of the mouth, exasperated to destructive ulceration by the abuse of mercury. The case is further interesting as showing that the disease only eventually yielded to the tonic influence of mercury and sarsaparilla; which, however, proves nothing as to its syphilitic character.

Such cases as the above are by no means uncommon. Without reference to this particular case, instances of what Mr. Travers would call mercurial cachexia, where the medicine has been admi-

nistered for other diseases besides syphilis, frequently present themselves. Indeed, the remark may be extended to the injudicious and long-continued use of other active remedies which produce a cachectic habit of body,—such, for instance, as arsenic, iodine, &c.,—probably from inducing serious lesions in the gastrointestinal tube. In cases of what Mr. Travers calls mercurial cachexia, considerable difficulty arises from the impossibility of ascertaining whether an original syphilitic sore existed or not. The causes of this obscurity are numerous and evident. From the position in which a sore occurs, it may escape the notice of the patient; nor can we always rely implicitly on the statements of the patients themselves. The propriety of withholding mercury when symptoms appear similar to those which, according to our author, characterize mercurial cachexia, cannot be questioned; although we are in many instances induced, in the latter stages, to exhibit it as an alterative, when, as in the case just alluded to, it often proves highly beneficial, particularly when given in conjunction with sarsaparilla and tonics.

Mr. Travers pursues his illustrations of reflected irritation by considering at some length Erysipelas and Gangrenous Inflammation. He observes, that he has shown that diseases of the constitution, taking on a local form, are not always of an inflammatory nature; but, when this local form exhibits inflammation, it is subjected to the influence of the constitution, and must be regarded as a constitutional inflammation. Strumous ophthalmia and strumous sore-throat are familiar examples:

“When we view,” says he, “such an inflammation springing up spontaneously, as an action for which we can assign no external or visible cause, we see, in its simplest and most genuine character, the constitution developed in the part, which, for want of a better term, I have called ‘reflected irritation.’” (P. 117.)

Mr. Travers’s object is now to consider such constitutional inflammations following local injuries.

“Not that it can be doubted that in reality all such affections begin alike, and that it is the variety of occasional causes, internal and external, which operate to call them forth, and of the constitutions upon which they fall, and not that of the diseases themselves, which leads us so to distinguish them; the state of the habit being much like that of a mine charged with inflammable matter, which only requires a spark for its explosion. And two circumstances especially tend to corroborate this fact of their identical origin,—viz. the greater proportion of cases of grave injuries which display no tendency to these affections, and the very slight injuries which often call them forth. Thus, a slight abrasion or contused wound of the skin is a more frequent occasion of erysipelas than a compound fracture; and a puncture or superficial laceration of muscular structure a more frequent cause of trismus than the more extensive mutilation of a limb.” (P. 119.)

Of all the diseases of the inflammatory class which come under

this definition, Mr. Travers selects erysipelas, as that of greatest intricacy and importance. We shall confine ourselves chiefly to those points which refer more directly to the professed object of the volume, necessarily omitting that descriptive matter which is essential to the completeness of the treatise, but which is not peculiarly novel, although sound, judicious, and worthy of perusal.

The parts disposed to erysipelas are, 1st, the skin; 2d, the skin and subcutaneous cellular membrane; 3d, the mucous and serous membranes.

1. *Erysipelas of the Skin.* The erratic form is the more dangerous, and spreading by the part is less threatening in its character and consequences than spreading by the constitution, (that is, in distinct patches with sound interspaces,) as the latter is owing to a greater degree of constitutional sympathy.

"Like gout, erysipelas is dangerous in proportion to its diffusion, by this denoting the universality of that state of system which gives origin to it; and its appearing in distinct parts not only shows how completely it is constitutional, but how much the constitution is oppressed and unable to relieve itself.

"The tendency to appear at the same time, or in quick succession, in parts remote from the point of injury and from the stomach, is a character of that erythematous erysipelas which arises from the operation of animal poisons, whether admitted by the skin or the stomach, in certain deranged states of the nervous system following slight wounds: in such cases I have known the patches to turn gangrenous in a few hours after their appearance." (P. 122.)

2. *Erysipelas of the Skin and Cellular Membrane.* The œdematous is the most common form; the œdema being a mode of relief to the overcharged vessels. A second termination is by suppuration and sloughing of the cellular tissue; and a third by gangrene, in which the skin dies along with the cellular tissue. This is rare, and happens abruptly, and from purely constitutional causes; unless occasionally, but very seldom, from excessive distention, as in enormous fascial abscess, or disorganization from violence, as in bad compound fracture.

"Gangrenous erysipelas is distinguished from gangrenous inflammation by the prior existence of the erysipelas, and its confinement to the integument, though diffused over a large extent of surface, as the entire or the half of a limb, for example. In gangrenous inflammation there is no such diffused swelling and redness as belongs to erysipelas, prior to the appearance of the phlyctenæ or sphacelated spots. When actual death has taken place in erysipelas of the trunk or limbs, the signs of distinction become faint, and would vanish altogether, but that the extent and circumstances of origin of gangrenous erysipelas seldom permit of the maintenance of life long enough to observe the phenomena peculiar to it." (P. 124.)

Mr. Travers next adverts to the fact which was first insisted on by John Hunter, that, in these terminations of erysipelas, the

adhesive process is passed over altogether. The absence of this boundary, which, "like the boards erected round a building under repair, precludes interruption to and from its neighbourhood, constituting the strongest local character of erysipelas." "Suppuration, when not so circumvallated, is an action without an object, and as purely destructive as gangrene." Even in the variety called "phlegmonoid," from the effusion being firmer, and conveying no sensation of fluidity, as in the œdematous and suppurative, it is not organizable lymph which is poured out, as in phlegmon, but the cellular tissue is distended with concrete albuminous matter, such as is seen after opening the vesicle of a powerful blister, and with this, in an advanced stage, pus and sloughs are intermixed. A similar effusion is found plugging the cellular tissue above a deep-seated tumour, and above a diseased joint, giving the preternatural depth and resistance to the incision in amputation. "It appears to retard suppuration, or by its bulk and solidity to restrict it within narrow limits." Mr. Travers has never seen it except in the extremities, and considers it absolutely insusceptible of organization. This variety frequently follows injuries of the hand, sometimes of the foot, and, if unrelieved, terminates in gangrene of the whole limb; whereas, in suppurative erysipelas, the skin is preserved at the expense of the subjacent texture.

3. *Erysipelas of the Reflected Membranes.* The conjunctiva, membrane of the fauces, air-tube, and rectum, and, Mr. Travers believes, of the pulmonary and gastro-intestinal surfaces throughout, are occasionally the seat of erysipelatous inflammation. It is rare, and chiefly in the immediate vicinity of the skin: it has an œdematous character.

"The excessive chemosis of the muco-serous membrane of the eye, which ushers in the acute suppurative ophthalmia, indicates, not less than its disposition to gangrene upon the cornea, that it belongs to this species of inflammation. In the pharynx and membrane of the glottis, it arises from cold and causes operating constitutionally, in which it sometimes turns gangrenous, as in scarlatina maligna; and from wounds of the throat, or caustic substances applied or swallowed, the obstruction to respiration from excessive swelling is sometimes such as to demand tracheotomy to prevent suffocation. \* \* \* The contagious property belonging to erysipelas is strikingly manifested in some of these cases. I have known it fatal to three of the same family within the space of ten days. In the rectum, ligatures of internal piles and of bleeding vessels, necessarily including a portion of the submucous membrane, give origin to this inflammation; and I have seen it in several cases produced by the division of a fistula, in which erysipelas of the nates, and gangrene of the integuments surrounding the anus terminating the erysipelas, terminated also the patient's life. The peritoneum is exposed to this species of inflammation after child-birth, and I believe that a large proportion of the puerperal cases are cases of erysipelas. The diffusion of the inflammation over the cavity, the non-production of adhesions, and

the presence of flakes of albuminous matter floating in a curdlike serum, the sudden prostration of power, and the strongly-marked property of communication, whether by contact or atmosphere, lead me to consider it as of this description." (P. 127.)

There seems to be little doubt that puerperal women are subject to two kinds of peritonitis, one of a simple inflammatory kind, and the other which, from the reasons Mr. Travers has given, may be called erysipelatous; and this view of the matter will furnish some explanation of the various and opposite modes of treatment which, at different times and by different practitioners, have been practised and recommended. But this erysipelatous form of peritonitis is not confined to the puerperal state. Dr. Abercrombie has given some highly instructive cases proving this; and three or four cases have fallen under our own notice of adult females in the same ward being all attacked within forty-eight hours with peritonitis, which, from the early prostration of strength, rapidly fatal course, not yielding in any way to the usual treatment, and the peculiar flaky, curd-like effusion, without adhesions, were evidently of the same character.

Mr. Travers next considers the "obscure pathology" of erysipelas. He considers erysipelas to be a nervous inflammation, or an inflammation continued under the direct superintendence of the nervous system; and the following is the outline of his argument. The capillary vessels of the skin are the seat of the peculiar inflammation, and these are at the same time independent of the influence of the heart, as is proved by the phenomena of the circulation; and in intimate relation with the brain, with which the skin is directly connected by the nerves, whose sentient extremities ramify upon it. The phenomena of blushing, and the opposite state, prove the more direct sympathy of the skin with the brain than with the heart: the blush precedes the heart's action, if any be perceptible, as pallor precedes syncope. The inflammation of erysipelas precedes the fever, and such an interval is not peculiar to erysipelas, but occurs in cutaneous inflammation from burns and scalds, as well as after injuries of cutting, tearing, and bruising the surface, and tends to show that the sympathy in disease also is slowly evinced between the heart and the skin, as compared with that existing between the latter and the nervous centre. In the more vigorous inflammation, as the adhesive and suppurative, the heart quickly enough participates, as in symptomatic inflammatory fever. The causes of idiopathic erysipelas, Mr. Travers thinks, strengthen his argument. He enumerates sudden changes of temperature, humid soil and atmosphere, polluted air, indigestible and luxurious food, exciting or depressing passions, excessive fatigue, &c., and asks, are they not alike depressing? Is it not upon the brain and nervous system that they act directly, and with especial force?

"In both sexes, the young, fair-skinned, and delicate, are liable to traumatic erysipelas, when debauched in their habits and mode of life. The frequent substitution of ardent spirits for food among the lower classes, is a powerful predisponent to the inflammation of erysipelas and gangrene, when they become the subjects of local injury. The gastric erysipelas, which Desault seems to have erroneously regarded as the universal form, is met with in persons of sedentary lives, and what is called atrabilious temperament, and among hard drinkers. It is common to find erysipelas, like jaundice and dropsy, in company with diseased changes of structure of the liver." (P. 142.)

The symptoms, as well as the causes, are those of deficient power; as pain, general sense of weight, confusion, lethargy, deafness, and prostration resembling typhus even, although the erysipelas is confined to the extremities.

As Mr. Travers's argument in favour of erysipelas being a nervous inflammation extends over a dozen pages, it would be impossible to do it justice by mere extracts; and, if we have failed in conveying a clear impression in our own words, our excuse must partly be, Mr. Travers's want of logical arrangement and frequent repetitions. We should be very unwilling to assert that erysipelas is not a nervous inflammation, in the sense which Mr. Travers applies it; for we are disposed to think, with Mr. Abernethy, that, as a general rule, the faulty actions of vessels are the consequence of the faulty actions of nerves. But we do not think Mr. Travers's arguments, furnished by the natural structure of the skin and its healthy sympathies, at all prove that erysipelas derives "its local peculiarities from its seat;" as we find the same texture extensively involved, as in inveterate psoriasis and chronic eczema, without any peculiar disturbance of the nervous system. The independence of the capillary vessels on the heart is a condition of that system, not peculiar to the skin, and consequently proves nothing. It is probable that the nerves are involved in that general faulty state, probably both of fluids and solids, which a bad state of the constitution implies, and that morbid sympathies are the consequence; but whether the peculiarity of erysipelas is to be attributed in so great a degree to the nerves, we think is still a matter of doubt. The causes enumerated certainly depress the nervous system, but they also depress and impair every vital function, and are common to numerous and different diseases.

As it regards treatment, the general opinion has been that it is a disease of debility. The general fear of full antiphlogistic measures has doubtless been inculcated by experience of their ineligibility and danger.

"The truth is, that an hypercatharsis of very short duration, or the loss of a few ounces of blood, has often proved fatal in an erysipelas, and the disease is not unfrequently terminated on a sudden, or the patient narrowly saved from sinking by such volatiles and cordials as

could be got down. At this moment there are hospital physicians, and others of equal repute, who treat the disease with ammonia, camphor, bark, and even alcohol, at its outset; others who treat it upon a purely antiphlogistic plan, but of these few venture upon bleeding, or more than a single and early bleeding, and they have speedy recourse to alimentary support to preserve the patient's powers. The truth, probably, in this, as in most instances, lies in medio; for it is a curious fact, that the success of the two parties is as nearly as possible balanced, so that the principle of treatment approximates more nearly than the details would lead us to suppose. This must arise from such modification in obedience to the same general principle as the circumstances of individual cases dictate; an explanation equally creditable to the discernment of the physician and his freedom from prejudice. A proof, too, that the disease presents great variety, or rather, perhaps, the constitutions in which it appears; and that the empirical (not to speak it profanely) is in truth the rational practice." (P. 145.)

Mr. Travers has found, with the exception of calomel and tartar emetic, in the onset of the disease, especially when attended with gastric irritation, the greatest benefit derived from the early administration of ammonia, and the different forms of bark now in use. He does not consider any external applications, beyond a cool and gently astringent lotion, or a light and equally consistent poultice, of any advantage. He bears his testimony to the value of incisions.

"In inflamed cedema, cedematous erysipelas, diffused inflammation of the skin from whatever cause, provided it be attended with swelling and tension,—whether soft and pitting, or firm and brawny; without any reference to the effused fluid, whether pus or serum, whether a circumscribed infiltration, or a diffused and heterogeneous collection,—a free and penetrating division of the integument is ascertained to be the most effectual mode of relieving constitutional irritation and saving texture. The relief is equally marked, even although no pus follows the incision, from the removal of stricture, and the escape of blood from the divided veins.

"Much mutilation and many lives have already been spared by this admirable practice. The incisions may be proportioned to the mischief to the extent of three inches, but seldom need or should exceed that space. They should penetrate the entire cellular structure; and, if arteries of a size requiring more than the pressure of the finger for two minutes be divided, they should be secured by ligature. The venous bleeding is beneficial; arterial is neither advantageous nor safe, as has been sufficiently proved.\* Two, three, or more such incisions may be made, if an entire limb is affected. Of the puncturing practice I have no favorable opinion: it irritates, without effectually unbinding or unloading, and is a cruel prolongation of suffering, especially when the disease is situated on the face and head." (P. 147.)

\* "If such patients are left but for a few minutes to bleed, they are left to die, and the object and end of this invaluable practice are misunderstood. A needless extent of incision not only increases this danger, but is open to other obvious objections."



These views are illustrated by cases, all worth perusing with attention.

Mr. Travers next considers Gangrenous Inflammation, as a second instance of a constitutional inflammation exemplifying reflected irritation. He commences by distinguishing gangrenous inflammation from gangrene. Gangrenous inflammation is inflammation of which the termination or crisis is gangrene: it does not therefore apply to those instances of gangrene which depend upon strangulation or arrested circulation from a change in the structure of parts; nor to instances of decomposition from heat, cold, or chemical agents. In such cases, inflammation is a consequence of the gangrene, not a cause, and often is a conservative process set up to circumscribe and throw off the gangrene. In these cases, the gangrenous part is dry, shrunk, and mummied; and, if a conservative process is set up, "the line of demarcation is announced by the deposition of adhesive matter; then the ulcerative action, beginning upon several points and proceeding along this line, gradually accomplishes the separation, while, at the same time, the construction of granulations out of the adhesive matter, constituting the third process, advances the final stage of repair, viz. the fabrication of the new surface. In the mean time the health is very little interrupted, the system being able to take and apply the support which the case calls for." (P. 164.) But, in other cases, the gangrenous inflammation may ensue upon gangrene, which is announced by swelling, livor, and acutely agonizing pains above the dry dead part; a common affection in aged, exhausted, and diseased persons.

"The contrasted appearances show the difference of the two affections, viz. the gangrene (of the foot or hand, we shall suppose) dry, cold, pallid, shrunk, and insensible, and the gangrenous inflammation of the leg or arm, swollen, moist, livid, vesicated, acutely painful, and undefined in extent. In this case, the adhesive inflammation fails, and the gangrenous inflammation succeeds, and our ancestors very sagely prohibited amputation until the barrier was established, and amputated without delay when it was, rightly appreciating the nature of the case, and knowing that the system, which had not power to stop a destroying inflammation, *a fortiori*, had not power to initiate a healing one, and consequently that the same mischief would fall upon the stump. We have not advanced, and cannot improve upon this sound and practical pathological axiom.

"Gangrenous inflammation is characterised by the moist state of the part, owing to the atony of the exhalant vessels; a peculiar dusky livor, and emphysematous swelling, with sanious vesicles here and there appearing; the pain, often excruciating; and an undefined and irregular margin from the deficiency or tardy formation of the lymph barrier. To these, as disorganization advances, may be added the cadaveric fetor and the loss of temperature compared with that of the neighbouring sound parts.

"The fever is either the mild inflammatory, or the typhoid in its com-

mencement; the first speedily lapses into the second, marked by frequent sinking and call for support; livid and cadaverous complexion, deficient alvine and urinary secretions, thirst, brown, or black furred tongue, hiccup, cold clammy skin, anxiety, and propensity to rambling, or muttering delirium. The pulse, yielding to the stimulus applied, is an artificial one, until the vital powers are so far sunk as to be no longer responsive to it; but even with the swell communicated by ammonia, wine, and opium, it has no real resistance, being easily compressible; and naturally quick, thready, and powerless." (P. 165.)

Mr. Travers then alludes to the erroneous ideas prevalent on gangrene, which he attributes to the confusion of gangrene and gangrenous inflammation; to the latter ensuing occasionally upon the former; to the constitutional condition being regarded as a secondary state, and seldom as the primary one; and to the remarkable variety of results,—in one case the establishment of mortification being equivalent to death, and in another a state comparatively free from danger; one man parting with both his feet with scarcely any illness, and another dying in three days after the appearance of sanious vesicles upon the instep, with all the local and constitutional symptoms of rapid mortification. This discrepancy, says Mr. Travers, is reconciled by reference to the constitution. If it is sound, the effect of the mechanical death of a part is to rouse it to a preservative action,—the adhesive; if it be infirm, the gangrene spreads. If the part be previously inflamed, particularly by erysipelas, the continued local or general excitement will determine the gangrenous inflammation; but, if recent and not very extensive, (both when spontaneous, and much more after injury,) it may be arrested, and the ulcer healed by supporting the patient's powers. The danger is greater according to the part; greatest if it interferes with a vital function, more dangerous in the trunk than the limbs; but the great difference is according to the constitution,—whether the patient be sound or diseased, strong or weak, young or aged; the subject of present or recent fever, or other constitutional ailment, or the contrary. Thus, Mr. Travers has seen the application of a small caustic issue to a scrofulous tumour, on the neck of a boy, followed by gangrenous inflammation, and death on the third day; and the application of six leeches to a small, painful, but uninflamed tumour in a young woman's breast, succeeded by gangrenous inflammation of the whole mamma in twenty-four hours, and death on the next day. Frostbite of the foot is often unattended with any serious constitutional disturbance, but in old starved subjects it is fatal; and, if spontaneous, the result of a worn-out system or diseased heart and vessels, it is almost always fatal. The slough of the penis is rarely fatal; that of the nates very generally: the latter is part of the trunk. From the impoverished systems of free livers and hard drinkers, the gangrenous inflammation may stop on one side, extend in another,

and then overshoot the boundary line, the newly formed granulations alternately sloughing; and thus entire limbs are affected from a seemingly insignificant beginning.

These remarks are so much to the point, and contain the results of such just and discriminative observation, that they throw much light on a very obscure subject. They are illustrated by cases, and followed by some pertinent remarks on the treatment of gangrenous inflammation.

"A mistake often committed by practitioners is an immediate recourse to stimulants: great additional mischief sometimes results from it. I have often seen patients restored under a gentle course of carminative aperients, with occasional salines, and a diaphoretic opiate at night, where severe sloughing had already taken place; the inflammation of the surrounding part has abated and the progress of the destruction has been arrested, and then tonics and wine have been administered with the happiest effect." (P. 200.)

Where there has been acute pain, a full habit, or flushed face, Mr. Travers has bled once with advantage. For the fever he has given salines, gentle aperients, and a full opiate at bedtime; mercurials, if the secretions require it. There is a period, often an early one, at which ammonia may be given, from five to ten grains for a dose, with the best effects. In these cases, quinine with sulphuric acid is useful. Opium, however, is the most beneficial drug, both in allaying irritation and in supporting the powers of the constitution. For the local treatment, leeches in large numbers, when venesection is out of the question, particularly when it follows severe contusion.

"The linseed, and especially the yeast or charcoal poultice, with poppy and chamomile fomentations, or opium suspended in mucilage and water; the chlorates of lime or soda, half an ounce or more of the solution to half a pint of water; the diluted nitric acid; the lunar caustic lotion; the black wash, with or without opium, are the best applications in my experience; these may be at first covered by the poultice, and afterwards by cerate. In cases of inaction, turpentine and olive oil, the benzoic tincture, the peruvian balsam, and the compound elemi ointment, are useful dressings; but the strong nitric acid most quickly and beneficially changes the surface. A lotion composed of three drachms of the chloride of lime, one drachm of caustic potass, and twelve ounces of distilled water, very speedily removes those dense crusts of ash-coloured slough which adhere so tenaciously to the bed of gangrenous ulcers." (P. 203.)

The last chapter on the subject of reflected irritation contains a recapitulation of Mr. Travers's views, explanations and justifications of his terms, and observations, particularly on the state of pathology, which are often very just and comprehensive. He has explained with force and truth the errors produced by morbid anatomy holding the first, and almost the only, place in the mind of the medical enquirer. Effects are thus substituted for causes,

and the laws of physics for the laws of life; and the cause of death is confounded with the cause of disease. But, Mr. Travers adds,

“I venerate that study for its power of confirming or correcting the opinions of the cautious and intelligent student of living nature; of shedding light where darkness reigned supreme; developing and enabling us to connect and compare the characters of morbid changes with the phenomena of disease during life, and thus to establish inferences, and gradually to arrive at a knowledge of the principles and laws which regulate morbid actions.” (P. 212.)

The whole chapter is well worthy of attentive perusal, as it contains the reflections of one who has seen the growth (almost from its commencement) of the school of pathological anatomists, and has attentively studied its effects. We regret, however, that Mr. Travers has indulged in a sneer at the attempts of pathologists to investigate morbid changes by the aid of the microscope. The observations of Gendrin, Kattenbrunner, &c. are surely worthy of a more candid comment than “these things, and a thousand others not less extraordinary, may be; yet, if knowledge has no bounds for our senses, its advancement must keep some measure with our understandings, or it ceases to be useful.” (P. 222.) Such principles would exalt the reason to that fatal pre-eminence which it held in scientific enquiries before the time of Bacon: “*Subtilitas naturæ subtilitatem sensûs et intellectûs multis partibus superat.*” Hence we are bound to use all those helps to the senses which modern discoveries may supply, and to look to such investigations for actual additions to our knowledge.

Let the most incredulous examine the boiled crystalline lens of a codfish with a modern microscope, and he will not wonder at any other microscopic discovery. We are convinced that John Hunter, were he now living, would be pursuing his investigations on inflammation with these helps. He, who would stand over an insect, dissecting it with a pin for four consecutive hours, would certainly never have thought attention to the microscopic detail of morbid processes beneath him. If the French investigators have not looked beyond the changes they have described, their theories may be bad, but the facts remain as materials for more philosophical induction. Into this want of candour Mr. Travers has been led by rather too exclusively attaching himself to the valuable pathological principles on which his whole work is founded; and, although he deprecates exclusiveness in others, we think it leads him too generally to direct his attention to states of the whole constitution, rather to the neglect of local organic disease. There are some valuable cases scattered throughout the volume, in which death after operations, secondary inflammations, &c., seemed to depend on the mere exhaustion of the constitution from suppuration, or some external inflammation not involving a vital organ; but the

surgeon should bear in mind that these cases are rare, and that, as a general rule, it will be safer for him to be guided in his prognosis by the healthy or diseased state of those organs essential to life. It strikes us that Mr. Travers, on the same grounds, passes over too lightly both the influence exerted by the digestive organs in inducing these diseased states, and the necessity of directing our remedies in this direction. The stomach is the "centre of sympathies," and obviously the great inlet of disease; and, to use the forcible simile of a vigorous writer, who a century ago enforced what we now call Abernethian doctrines, "the cure must begin where the evil began; and must be communicated thence to the rest of the system, as a ropemaker begins the twist at one end of the rope, and communicates it to all the other parts."

We have already alluded to one evil resulting from the exclusive attention paid to diseased products, the correction of which Mr. Travers's writings are calculated to effect: they will also tend to dissipate another resulting from the same cause, and shown in a disposition to under-rate reasoning upon the facts thus assiduously collected. Mr. Travers is one of those surgeons who admit that the most enlightened practice must derive its value from study and reasoning. He pursues his profession with enlarged views, and is evidently not content with the knowledge to be derived from mere experience. It is by such cultivators of surgery that it is ever best improved. They do not merely succeed in establishing points of practice, but direct attention to the principles of the science.

In concluding our remarks on the first part of this work, we willingly concede to our author the merit of earnestly endeavouring to direct the attention of surgeons to the best method by which a knowledge of the diseases they have to treat can be obtained. His object is to elevate surgery, and to cultivate it on scientific principles. He has laboured to elucidate some of the most important and difficult points connected with its pathology; and if, in the prosecution of his object, he has occasionally failed in producing conviction by his theories, we are not, on that account, to pay the less attention to the great quantity of valuable matter which he has laid before us.

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## ART. II.

*Leçons de Clinique Médicale, faites à l'Hôtel-Dieu de Paris par le Professeur A. F. CHOMEL, recueillies et publiées sous ses yeux par J. L. GENEST, D.M.P. (Fièvre Typhoïde). Paris: 1834. 8vo. pp. 548.*

*Clinical Lectures delivered by Professor CHOMEL at the Hôtel Dieu in Paris, (Typhoid Fever.) Collected and published by J. L. GENEST.*

M. CHOMEL is one of the clinical professors appointed by the School of Medicine of Paris, and is better known as a teacher than an author; for, although he has published two works, one of which went into a second edition, yet, for the last ten years, he has apparently devoted his time almost exclusively to the oral instruction of his pupils. His reputation among foreigners is consequently less than that of inferior men, who have taken the more effectual way of extending their names beyond the confines of their own country. Those who have been his pupils, however, hold him in high estimation. His unwearied attention to his hospital patients, his careful examination of every case, although his ample experience might justify more haste, the untiring assiduity with which he displays to his class the recent specimens of diseased structure which examinations after death afford, mark a devotion to his profession, and a regard for the interests of his pupils, which cannot fail to command their respect; whilst his powers of eloquence and clear arrangement as a lecturer call forth their admiration of his abilities.

This volume contains the substance of M. Chomel's clinical lectures on Fever, arranged under his own inspection by M. Genest, a former pupil. M. Chomel regards all fevers as essentially the same; constituting one genus, but capable of division into several varieties. He adopts the name Typhoid Fever, which is given to the continued fever prevalent in Paris, and of which this volume may be considered as the history. After describing its general symptoms, he enters minutely into its complications. This simplification in the nosology of fevers is based on the discoveries of pathological anatomy, and is well calculated to clear away many difficulties with which the French nosologists had encumbered a subject in itself sufficiently intricate. The inflammatory, bilious, ataxic, and adynamic fevers of Pinel,—the entero-mesenteric fever of Petit and Serres,—the "exanthème intestinal" of Andral,—the "dothinentérite" of Bretonneau,—the "ileo-ylidite" of Bally,—and the "entérite folliculeuse" of others, are thus considered as typhoid fever, modified by certain circumstances. In this country, the general custom is to apply the name typhus to fever attended with great prostration of strength: when the symptoms are milder, it is called simply continued fever, or subdivided into synochus and synocha, if the practitioner adheres to the nosological system of

Cullen. It is to be understood, that the term typhoid fever here used would be applied by M. C. as including all these cases. This classification, which is becoming the favorite one among the French pathologists, is, we trust, finding favour also in this country. The division so long adopted by Cullen cannot be applied at the bedside; for the same case may at different periods put on the three different forms, and oblige the systematic adherent to this classification to change repeatedly the name of one disease. The great object formerly was to investigate the causes rather than the phenomena of fever, and the treatment which was recommended depended on the theory of the disease; varying, of course, according to the views of different schools. In the investigation of fever in this and in the more recent works of pathologists, the attention is particularly directed to the lesions discovered after death, and an endeavour is made to connect these, as far as possible, with the signs during life. The great practical advantage of this latter plan is to destroy devotion to any one system, and to enforce the necessity of minutely attending to the symptoms of every case, and acting in accordance with the information so obtained. There is some danger of this leading to the opposite extreme, of regarding the general symptoms of fever as the expression of some local disease. It has not, however, had this effect on M. Chomel, who regards fever as a general disease of the whole system, whilst he fully recognizes its local complications.

The plan which will be pursued in this article will be to give a condensed analysis of M. Chomel's volume, in order to furnish a complete history of the typhoid fever of Paris. The mere translation of well-selected extracts from a work on Fever would be of little use to any reader.

*Symptoms and Progress of Typhoid Fever.* Although the forms of fever differ greatly, yet there are a series of symptoms common to all, which will be first stated.

1. Precursory stage, and invasion.

In the great majority of cases the attack is sudden. Thus, in 73 out of 112 cases, there were no premonitory symptoms observed. We would here remark, that this statement should be taken with some little reservation; for these were all hospital patients, whose accounts cannot in such matters be implicitly relied on, from their want of accuracy in relating the history of their diseases, and a deficiency in the power of observing even their own feelings. Medical men, who are aware of the importance of close observation, and who have suffered from fever, have detected, in their own cases, some deficiency of mental vigour preceding the rapid development of the fever itself; and such cases among the poor would be at once set down as instances of sudden invasion without prelude.

The premonitory symptoms are—depressed expression of countenance; diminished power of application to intellectual employ-

ments; debility; anxiety; a feeling of uneasiness or discomfort; pain in the limbs; loss of appetite, foul tongue, nausea, &c.

The first symptom of invasion is generally intense headach on waking in the morning; sometimes, though rarely, preceded by diarrhoea. The expression of countenance becomes rapidly altered; a marked appearance of stupor is not unfrequently observed from the first. Rigors followed by heat; great muscular debility, so that the patient takes immediately to bed, or, if he attempts to walk, staggers as if drunk. On asking such patients how they came to the hospital, they almost constantly reply that they were carried in. Diarrhoea is one of the most constant early symptoms, together with abdominal pains. M. Chomel divides the course of the disease into three periods, of a week each, as, in the most simple cases, there are a peculiar set of symptoms proper to each of these periods.

This division must not be regarded as any thing more than an approach to a natural one, as it will be seen hereafter that the period of termination of the affection follows no fixed times. It is, however, a convenient division, and, if looked upon merely in this light, it cannot be objected to.

*First Period.* The change in the physiognomy is striking: it is expressive of apathy, from which the patient cannot be roused except by questioning him in a manner to excite strongly his attention. His answers show that his intelligence is diminished. Muscular debility causes him to lie in one position on his back. Constant wakefulness, or dreams so vivid that he confounds them with sensations, and believes that he has not slept. Headach, generally confined to the forehead, continues with more or less intensity during the whole period. The secretions of the mouth become thick and glutinous, so that the finger, if applied to the tongue, is detached with some little difficulty. The tip and edges of the tongue are red, with a small white border on each side; sometimes preceded by a whitish or yellow coating, with a foul taste. As the mouth dries, the whole mucous membrané becomes of a uniform red colour, the lips crack, and the teeth look brilliant from the dried layer of mucus which covers them. Anorexia, sometimes with nausea and vomiting; dysphagia; great thirst; diarrhoea almost universally; from four to eight daily evacuations. In many cases some gaseous distention of the intestines may be detected by percussion, even before there is any enlargement sensible to the eye. A gurgling sound is heard when the lower part of the belly, and particularly the right iliac region, is pressed with the hand. This, which is owing to the presence of air and liquids in the intestines, and may be also connected with a pathological condition of the ileo-cæcal valve, is as rare in other diseases as it is common in this: it is more frequently present in the second and third periods. In the majority of cases there is increased sensibility over the bowels on pressure, rarely acute, and often not com-



plained of, unless strong pressure is employed: it may be confined to the right iliac region, to the whole hypogastric or epigastric regions, or it may extend over the whole abdomen; in which case, it is often connected with a painful state of the neighbouring parts, as the chest, or even the whole surface. During the first days there is generally strong reaction of the circulation, with marked inflammatory symptoms: pulse large, and sometimes resisting and frequent; skin red. Towards the end of this period these symptoms diminish; the pulse may be more rapid, but it is soft; the skin, which was covered with abundant acid perspiration, becomes dry and hot. Urine scanty, high coloured, and foetid; early epistaxis is common, and a valuable diagnostic symptom. The bleeding is rarely copious, but often occurs several times. The state of the lungs is important in diagnosis: often from the first there is a general sibilant râle over both lungs, more marked inferiorly and posteriorly. The cough is rarely in proportion to the râle; the expectoration is scanty, viscid, and transparent. Obstruction of the nostrils by dried mucus or blood, and extreme meteorism, often produce dyspnoea. In some few cases none of these symptoms are present during the first week, except a febrile condition. Death rarely occurs during this period. Of forty-two fatal cases, only one death took place in the first week.

*Second Period.* The eruption which is peculiar to typhoid fever usually appears between the seventh and ninth days. It consists of small rose-coloured spots, disappearing on pressure, from half a line to two lines in diameter, round, not or hardly elevated; scattered over the abdomen, sometimes on the breast, more rarely on the thighs, arms, and forearms: their number varies; in order to be characteristic, there should be at least fifteen or twenty; no value can be attached to two or three. They do not all appear at the same time; their duration is uncertain; they ordinarily disappear in two or three days, in other cases they remain twelve or fifteen days, but then it is probable there are successive eruptions. Out of seventy cases occurring in 1830-1-2, where attention was paid to this point, there were only sixteen in which the eruption did not appear. Of these fifty-four cases presenting the eruption, there were none in which it appeared before the sixth day, and in two cases it appeared as late as the thirty-sixth day of the disease. This agrees with the results of a larger number of cases examined by Louis. The value of this sign in the diagnosis will be evident, when its frequency in typhoid fever is contrasted with its infrequency in other acute diseases, and that, when it does appear in the latter cases, it is never abundant. This eruption is distinguished from petechiæ and fleabites by its colour disappearing entirely under pressure, and returning as soon as it is removed. Hildenbrand observed a similar eruption in the typhus of camps; and, in 1814, M. Chomel had an opportunity of verifying his observation in Paris. The extent of this eruption in some

epidemics gave rise to the term petechial fever. Sudamina are sometimes observed at a later period, but they are not so intimately connected with this disease as the eruption just described: they are small, demi-hemispherical, transparent vesicles; when viewed obliquely they have a brilliant appearance, but, when looked at perpendicularly to their axis, they escape observation. This explains why they have been so rarely mentioned by authors. They are readily distinguished by the touch: they appear at first on the sides of the neck, and in the folds of the armpit and groin, from thence in some cases extending to the trunk and limbs. It is a symptom of some importance, as it is much more frequent in this disease than in any others with which it may be confounded. Sloughing may be produced by pressure, as on the sacrum and heel, and also on the back of the hairy scalp, where it is often overlooked; it sometimes occurs spontaneously and suddenly, as on the inner surface of the thighs or upper part of the foot; it may follow the application of sinapisms or the irritation of urine and fæces. In the least serious cases, which are also the fewest, the debility and stupor (if present) remain in the same degree as in the first period; but, in the most serious forms, the prostration of strength is complete, and the patient lies on his back, an inert mass. The muscles of the throat sometimes partake of the debility, and deglutition becomes impossible; the liquids being rejected through the mouth or nose. Dysphagia may depend on inflammation about the epiglottis, or ulceration of the mucous lining of the fauces and œsophagus. Involuntary discharge of stools is another symptom of muscular debility. There may be retention of urine, producing, if overlooked, paralysis of the bladder. If the respiratory muscles share in the deficiency of muscular power, the patient is in danger of suffocation. Together with this extreme prostration of muscular force, it is not uncommon to find subsultus of the tendons of the arms and hands, or convulsive twitches of the nose and upper lip, and carpology. General and permanent rigidity of the limbs is almost always a fatal symptom: a boy of fifteen, however, recovered, who had this symptom for two days together, with aphonia and remarkable smallness of the pulse. In mild cases the headach ceases, and, instead of constant wakefulness, the patient is in a drowsy state, from which it is impossible to rouse him, except for a few moments. This is the Coma somnolentum of authors, and often lasts many days. When this stupor is so great that the patient cannot be roused by any excitement, he generally dies in a few days in the same state. Instead of stupor, some have delirium, coming on in the evening or at night, or constant; either violent or tranquil. Deafness, in most cases independent of stupor, is very frequent. Occasionally the senses of sight and taste are weakened. The force of the general febrile symptoms is much diminished; the pulse is small, weak, trembling, jerking, or intermittent; generally from 100 to 120; in others,

from eighty to ninety; in a few, it falls as low as forty or fifty at the termination of this period. There is an increase of fever in the evening, sometimes hardly perceptible, at others violent, and more rarely preceded by rigors, and terminating by sweating, than in the first period. Skin of a more acrid heat, drier and rougher; thirst less urgent; the nostrils having become impervious to air, the patient breathes wholly through his mouth, and the mucus covering it becomes dry, and changes from a brown colour to a brilliant black: this has been mistaken for effusion of blood. Diarrhœa continues; sometimes less frequent. Hemorrhage from the bowels, which, if abundant, speedily destroys the patient: this symptom is important in the diagnosis, as it is much more common than in other diseases. Meteorism continues or increases; abdominal pains not complained of, except in the mildest cases; respiration often more difficult, although the local symptoms do not increase; the breath and perspiration have an offensive smell, peculiar to fever. In mild cases the progress is much more simple, so that the febrile state, with some few only of the characteristic symptoms, mark the nature of the disease. Of forty-two fatal cases, nine deaths took place during this stage.

*Third Period.* The symptoms either improve and lead to convalescence or become aggravated, terminating in death. Thus, thirty-two patients, out of forty-two who died of fever, died in this stage; and, of ninety cases of recovery, convalescence commenced in one only during the first period; and, when the symptoms were severe, there were no instances of improvement before the end of the second. Improvement of expression, and attention to what is passing, are often the first stages of amendment; or the comatose state is exchanged for peaceful sleep, on waking from which the patient partly recovers his intelligence: he is able to move himself a little; the tongue and mouth become moist; meteorism diminishes; the evacuations are of a more yellow colour, less fluid and fetid. Sometimes, at the moment when the first amendment of the symptoms commences, solid and formed stools are passed; sometimes black, dry, and in prodigious quantities: they had probably lain hidden in the cells of the colon. The patient becomes aware of the passage of his evacuations; respiration more free; expectoration less viscid; pulse slower, less soft, and firmer; skin more supple, or moistened. At this period it is not unusual for abscesses to form in parts of the body which do not appear to have been irritated. The face becomes thinner, and the features and expression more marked. Of sixty-eight favorable cases, the convalescence commenced by one or more of the previous symptoms on the following days:

In 1 patient, the 8th day after the attack.

1 — 9th.

4 patients, the 12th.

3 — from the 12th to the 14th days.

In 10 patients,	from the 15th to the 16th.
15 —	from the 17th to the 20th.
14 —	from the 21st to the 25th.
11 —	from the 26th to the 30th.
8 —	from the 31st to the 40th.

It will be seen by this table, although the days on which the improvement commences are very variable, yet that, in fifty cases out of sixty-eight,—that is, nearly three out of four, the improvement commenced from the fifteenth to the thirtieth day.

In fatal cases, the stupor augments, expression more changed; the mouth is drier, or, if moistened, it is only by the secretion of grey, viscid mucus, mixed with blood, and foetid. Respiration more difficult, stertorous; sometimes, towards the last days, crepitation is heard posteriorly and inferiorly, which is replaced by complete absence of respiration. Pulse more feeble; heat diminishes; skin dry, covered with cold, glutinous sweat; emaciation general and rapid; eyes hollow; features drawn down with a fixed expression, (facies Hippocratica.) If the patient can speak, it is with difficulty and with a trembling voice; the answers are unintelligible, even if the words are understood. The exhaustion of strength is complete, and the comatose debility is speedily followed by death. In some few cases, either at this period or during convalescence, the patient is suddenly seized, if his sensibility is sufficiently excitable, with extremely acute pains in the abdomen, sensation of sinking, alteration of expression, nausea and vomiting, and the symptoms of typhoid fever give way to those of partial or general peritonitis. The pulse is small and thread-like, the abdominal pains are excessive. This sudden attack of peritonitis, depending on no apparent external cause, is owing to perforation of the coats of the intestines and effusion of fæces into the peritoneal cavity. It is almost inevitably fatal. Two out of forty-two fatal cases died from this cause. Erysipelas of the face is a very fatal complication: it was observed in four cases out of 130, and all four died. The convalescence from fever is not rapid; in some cases it is extremely prolonged. Satisfying the appetite, which is often voracious, frequently leads to very serious consequences. Œdema of the lower extremities sometimes follows fever; so does mental derangement in some few cases, but it generally disappears when the patient resumes his previous habits of life.

Such is a brief sketch of a very full history of the common symptoms of typhoid fever, as seen in the Paris hospitals. The method and arrangement of the whole is highly judicious, whilst the description is clear and comprehensive. The minute attention to symptoms is seen in the description of the peculiar eruption of rose-coloured spots, the gurgling sound on pressure of the abdomen, the discovery of gangrene on the back of the head, &c. To such points we would beg the attention of practitioners in this country, who have, from situation and circumstances, constant

opportunities of observing fever in all its forms. The eruption of red spots is almost universally present in the typhoid fevers of Paris, and is one of the points to which the physicians of the hospitals particularly direct their attention as a diagnostic mark.

In this country, these "*taches rosées*" are, if observed, frequently confounded with others under the term *Petechiæ*; but there is an essential distinction between the typhoid eruption, which disappears on pressure, and consequently has the character of an erythematous eruption, and spots which depend on an effusion of blood beneath the skin, which are not influenced by pressure, and which Willan called *Purpura*. The one is an eruption, the other a hemorrhage; and, as they probably depend on two very different states of the system, and are of very different value as regards the prognosis, it is in every respect important to distinguish them. We suspect that the little notice which has been taken of this eruption in this country is owing rather to the want of observation than to its non-existence; for the appearance is so inconspicuous, that, unless the attention of the examiner had been directed to it by another, or had had the opportunities of comparing together numbers of cases at the same time, and thus of deciding on the essential and non-essential symptoms for himself, he might very probably give it no attention, although he had observed it, from considering it to be a trifling and accidental complication. M. Chomel, in stating the proportion of cases in which he observed it, does not go back more than three years; as it was only since that time that his attention was especially called to it, although he had attended to the petechiæ of camp-typhus twenty years ago.

The description of the appearance of scybalæ in the stools at the commencement of the recovery, is an example of the peculiar view which our neighbours take of the causes of symptoms. In this country we should most probably attribute the amelioration of the symptoms to the discharge of the accumulated fecal matter: M. Chomel regards it as a symptom of commencing convalescence, that is coincident with improvement in other respects, and in no wise as producing it. This difference is owing to the different points of view from which the same subject is looked at: we are engrossed in treatment, and see in this symptom only an effect which we could and should have produced much earlier, and believe that its production even at that time would have been followed with good effects: our neighbours, who are devoted to diagnosis, and look at the powers of nature with more respect and confidence, regard it merely as one of the changes which mark the power of nature in relieving herself from the disease. In a practical point of view, there can be little doubt that the presence of these scybalæ must have been a source of irritation to the patient, and that, if medicine had produced the same effect earlier which nature did eventually, the symptoms would have been milder, although the course of the disease would not have been cut short.

The negative evidence of such writers as M. Chomel on crises and critical days is more valuable, from their being great believers in the efforts of nature in the cure of fever, although not professedly humoral pathologists. Of ninety-four cases, there were two in which copious perspiration was followed by benefit; and two others where an abundant discharge of faecal matter coincided with an amelioration of the symptoms; in the remaining ninety, nothing similar was observed, so that these four cases can only be regarded as rare exceptions. In some few instances improvement preceded evacuations, which have been called critical: they were proofs rather than causes of amendment. The only phenomena which really appeared to precede improvement were abscesses, in six cases out of eighty. The list given of the days in which improvement took place shows that it happened many times in each day between the fifteenth and thirtieth. These observations do not tend to support either the doctrine of critical days or of critical evacuations; and, as the cases have been collected and examined in the most careful way, the results must be admitted as correct as far as relates to the fever which is described. Cullen was disposed to think that the fault lay in the physician who denied the doctrine of crises in fevers; but this objection cannot apply to such observers as M. Chomel. The accurate way in which the examination of the question is conducted justifies the conclusion that the phenomena did not occur in a large number of cases, and therefore the evidence must not be regarded as a mere negative assertion that certain circumstances were not observed.

The apparent discrepancy between the assertions on these questions of former writers of credit, and the results of facts which come more immediately beneath our notice in our own times, admit probably of explanation, if it is allowed that fevers are so modified by circumstances, that hardly two epidemics are precisely similar. That the notions of crises and critical days were sanctioned by many humoral pathologists without enquiry, from its agreeing with their favorite theory, is very probable; but we cannot doubt that the opinions of Hippocrates and men of like stamp were founded on accurate observation. The diseases of the Greeks, however, must have differed materially in character, progress, and termination, from those which affect the nations of modern Europe, inasmuch as external circumstances influence the pathological as well as the physiological actions of the body. "There is," says Dr. Latham, "in healthy and vigorous bodies, a certain regularity and balance of function, which, even when disease befalls them, is seldom lost, but their morbid action is still harmonious and proportional. In them diseases are often severe, but they are generally simple. On the other hand, the weak and valetudinary, who at the best are full of jars and incongruities, are obnoxious to the strangest forms of disease, hard to understand, and hard to treat." As physical perfection was most highly prized by the Greeks, the

preservation of vigorous health was the object of their most assiduous care. Their civil and military institutions required and favoured exercises and manners best adapted to develop their bodily powers, whilst the climate allowed their form to grow unfettered. The weakly constituted probably perished in their infancy, by that barbarous custom which gave the parent the power of putting to death his infant children. That this practice, which was so universal that their philosophers did not venture to disapprove of it, would be put into execution on sickly children, cannot be doubted in a nation where delicacy of organization was considered a reproach. Among such a people the progress of disease must have been but little complicated, and the curative efforts of nature could have met with few obstacles to their free exercise. If fevers were ever relieved by critical evacuations, and followed a course which would justify the fixing of critical days, it must have been among such a people.

The enumeration of the symptoms is followed by a detail of the morbid changes which are discovered after death. This occupies nearly half of the volume, the changes being described with the utmost minuteness, and an attempt made to elucidate the order in which they happen. Cases illustrate the whole.

The researches of recent pathologists have shown that there are some lesions constantly, or almost constantly, found; whilst others are less frequently met with: hence they may be divided into the constant and the accidental.

1. *Constant lesions.*

These include diseases of the follicles of the intestines and of the mesenteric glands, which are almost always discovered. The follicles of the intestines are either isolated or in groups: the first are called the glands of Brunner, the second of Peyer. The earliest period from the commencement of fever at which M. Chomel has had an opportunity of examining their morbid condition, was in a case in which death took place on the seventh day. Out of fifty-five cases examined by Louis, the most recent was on the eighth day. At this period the intestines are distended with gas, which increases their transparency, and shows externally a number of opaque spots, of various sizes, along the curvature of the small intestines. On examining these internally, they are found to be produced by the deposition beneath the mucous membrane of a yellowish white matter, rather friable, in the situation of the follicles, giving the aggregated glands of Peyer the form of a patch, generally elliptical, varying from three inches to one inch in the longest diameter; and the isolated follicles of Brunner that of a large pimple, which some pathologists have mistaken for pustules. Their colour varies according to that of the neighbouring parts: if the mucous membrane is pale, the patches are of a dead white; and if red, they are of a much deeper red. The larger patches are found in the ileum and termination of the jejunum; most nume-

rously towards the end of the small intestines; and, when but few exist, they are almost immediately above the ileo-cæcal valve, the ileal surface of which is sometimes covered. They are almost always opposite to the attachment of the mesentery. The enlarged isolated follicles are in some subjects much more numerous, and are scattered indiscriminately; they rarely are found above the last third of the ileum. In one-third of the cases, the isolated follicles of the large intestines are diseased; those in the colon are much larger than in the ileum, and they again diminish in size as they approach the rectum. The mesenteric glands which are nearest to these enlarged follicles become enlarged, and of a deeper colour. Sometimes their consistency is firm, at others soft. The disease of the follicles appears to commence in those nearest the ileo-cæcal valve; and, as the fever proceeds, those higher up in the small intestines are implicated: the affection of the mesenteric glands follows the same course. The number of diseased patches varies from one to twenty or thirty. The isolated glands are often free from disease, but in these cases death has generally taken place from the fifteenth to the twentieth day. When death had occurred earlier, they were found very numerous in the lower part of the ileum. If the patient dies during the second period of fever, other changes in these enlarged follicles are observed. Ulceration takes place, commencing either in the mucous membrane covering the patches, which it gradually destroys, or the layer of yellowish matter is softened primarily, and the mucous membrane is consecutively removed. In both cases the ulceration of the mucous membrane is the result of the diseased state of the follicles, as it only commences over these patches, and is confined during this period to these parts. This was the case in forty-two instances of death during this stage, without any exception. In ninety-two cases closely observed by MM. Chomel and Louis, ulceration commenced from the eighth to the twelfth or fifteenth days from the first attack. The ulceration proceeds from the ileum upwards. The isolated follicles more rarely ulcerate: in one case only out of forty-two were they alone ulcerated. In some cases during this second period, the mucous membrane covering these patches becomes of a dark colour, separates from the subjacent tissues, and is observed to be perforated with a large number of holes, giving it a reticulated appearance: these holes are the orifices of the enlarged follicles. Beneath this the submucous tissue is found, or a thin layer of the white deposit. The separation of this reticulated mucous membrane exposes an ulcerated surface.

If the subject dies at a later period, new changes are observed. Sometimes there is no trace either of the ulcerated or reticulated patches, but merely ulcers, whose edges have no trace of the debris of the whitish deposit, and whose form and situation may not indicate their origin in the glands of Peyer. The ulcers may be not



elliptical, but round, or very minute, or an ulcer of two inches in breadth may occupy the internal circumference of a portion of intestine, the edges not being irregular, but as if cut with a stamp. The question is, important whether or not these ulcers have their origin in the diseased follicles? When there are traces of the debris of the whitish matter on the edges of any of them, there can be no doubt as to their nature. If, after a typhoid affection, ulcers are found in the situation and of the form of the follicles of Peyer, their origin is equally clear; if the situation and figure differ, it must be remembered that there are patches of shapes and sizes intermediate between the more common oval ones, and that these alone may have ulcerated. The symptoms will throw light on their nature. Those cases alone can be doubtful where the symptoms of typhoid fever were obscure: here the variable forms of fever should be borne in mind, and, if the length of the disease agrees with that of typhous fever, the ulcers must be attributed to disease of these follicles. An acute disease arising in a person in perfect health, and terminating fatally in a few days, in which ulcers were found in the intestines, would be an exception; but M. Chomel has never seen such a case. In all those cases where ulcers have been found, the disease has lasted at least eighteen days. M. Chomel thinks himself justified in concluding, until new facts are brought forward which may modify his inferences, that ulcers which are formed in the intestines after an acute disease are the result of lesions of the follicles, and not a primary affection of the mucous membrane.

It seems probable, from the form of the ulcers, that in some cases they extend beyond the original situation of the follicles.

There are two principal varieties in the ulcers; some being simple, the others connected with hypertrophy of the cellular and muscular coats. In the first, the mucous membrane forming the edges is white and thin; neither red, softened, nor thickened: almost on a level with the ulcerated surface; with no appearances of inflammation; the shape is regularly rounded. In the second variety, the edges are prominent, deeply cut, more or less of a slate colour; whilst the cellular and muscular coats are much thickened; the bottom of the ulcer is sometimes formed by the thickened muscular coat, or, if that is destroyed, by the peritoneal coat only; whilst the edges are three or four lines in thickness, from the hypertrophied state of the mucous, cellular, and muscular coats. When perforation of the intestine takes place, it is generally by a small hole, always corresponding to an ulcer, and generally in the last foot of the small intestines. Around the perforation are found adhesions or purulent matter; and in this effort of nature to produce adhesion rests the only hope of cure. Perforation occurs from ulceration or mortification of the peritoneal coat; it may also be favored by the intestines being distended with air, and perhaps

to this cause may be attributed the fact that perforation occurs much more frequently in fever than in phthisis, where ulceration is very frequent, but meteorism rare.

*Cicatriziation of Ulcers in the Intestines.* If death takes place at a later period than those previously considered,—that is, six weeks, two months, or even later, after the attack,—the edges of the simple ulcers are still more flattened; so that often, in several points, it is difficult to distinguish the sound membrane from the ulcerated surface: in the centre are small inequalities, which seem to answer to the granulations of common ulcers, but are distinguished with difficulty. If death ensues at a later period, no traces of ulceration sometimes can be found, or the spots where ulcers did exist may appear more smooth, or darker, or slightly depressed. Facts are wanting to enable us to specify the time when all traces vanish. For many years M. Chomel has examined the intestines of those who have died of other diseases, and yet he has never found traces of cicatrices, although many of these, from their own accounts, had suffered from typhoid fever previously. This is to be explained by the colour and appearance of an internal cicatrix approaching much nearer to those of the surrounding parts than an external one.

When no ulceration or destruction of the mucous membrane has taken place, it appears that resolution of the diseased follicles may happen. Thus, in patients who have died when some patches have ulcerated, other patches which have not ulcerated are less elevated than in those cases where death has taken place earlier; and, again, there is a still further diminution in the elevation of these patches in still more protracted cases. The absorption, as might be expected, seems to follow the same course as the deposition, being earlier in the patches near the ileo-cæcal valve. In a few cases, either the whole or parts of the patches, during probable absorption, have been found of a deep blue or slate colour, and even black. The isolated glands are more rarely coloured. This should not be confounded with a more frequent appearance of both kinds of follicles, in which their little orifices are surrounded by a minute black circle, giving the patches the appearance of a chin when its black beard is just shaven. M. Chomel considers this to be a normal condition in such individuals. The enlarged mesenteric glands in those cases, where cicatrization goes on, diminish in size almost to their natural standard; but they become firm, red, violet, or even black, both externally and internally. They never ulcerate.

There are three other diseases in which diseased follicles have been discovered.

1. Cholera. In the greater number of patients who died of cholera in 1832, the follicles of the intestines were enlarged. The elevation was about the fourth or fifth of a line, of a darker colour than the surrounding parts, sometimes of a dull white, or red, or

dark brown. They differed from those in typhoid fever,—1, in being much less elevated; 2, in the uniformity of the lesion at all epochs of the disease: there was no difference, although some patients died twenty-four hours, and others thirty-six days, after the first seizure. Ulcerations were never found. Both kinds of follicles were enlarged.

2. *Phthisis.* The resemblance between the diseased follicles in phthisis and in typhoid fever is more exact. In most subjects who die from phthisis, the isolated follicles are increased in size, and filled with a firm whitish substance, whilst others are ulcerated; thus approaching very nearly the change which takes place in typhoid fever. The distinguishing difference, however, depends on the changes in the glands of Peyer. Instead of a uniform layer of whitish deposit, the patches present on their surface a small number of tumours, exactly like isolated tubercular follicles: in some cases a few only have ulcerated, in others there are extensive ulcerations, with a few of these tubercles on the edges. Where there are extensive ulcers only, the induration and thickening of all the surrounding tissues distinguish their nature. The mesenteric glands, too, are converted into tubercular matter.

3. *Scarlatina.* The follicles are enlarged occasionally, as in cholera.

We have thus given, at some length, M. Chomel's description of the changes which the follicles of the intestines undergo in fever, as the importance of examining the intestines carefully in this country has been very generally overlooked. Within the last few years, M. Chomel has examined forty-two fatal cases of fever at the Hôtel Dieu, and there was not one amongst them in which these follicles were not more or less diseased. These facts are not novelties, but are merely corroborative of the statements of preceding observers. For many years morbid anatomy has been ardently cultivated in France, but it is only since MM. Petit and Bretonneau directed particular attention to this lesion that the intestines have been examined with that constancy and minuteness which were necessary to confirm the connexion between typhoid fever and this change of structure: and, although we may hold in little estimation the theories built upon this basis as to the nature of fever, yet we cannot but look at the facts themselves as of great importance in elucidating the history of the disease, and thus as likely to furnish surer guides to its treatment. Such discoveries show the importance of the principle so laboriously practised by M. Louis, of minutely examining all the organs of the body, and not only those where disease was suspected.

The importance of establishing the follicular origin of the ulcerations of the mucous membrane in fever, is more felt in France than in this country, as Broussais had converted fever into mere gastro-enteritis, and had based his treatment on his theory. The constant presence of ulcers in these cases gave a plausibility to the idea that

fever depended on a local inflammation; but, by tracing the origin of these ulcers to enlargement of the mucous glands by the deposit of a white cheesy matter in their substance, and a subsequent sloughing of the mucous membrane covering them, whilst that around was in a natural condition, the theory of the inflammatory school was overthrown by their own weapon, morbid anatomy. Rational views of treatment, deduced from this knowledge, would correspond more nearly with those of our older physicians than with those moderns who imagined that fever could be cured by means of a few leeches, iced enemata, and slops.

The next point which M. Chomel endeavours to solve is the *Connexion between the Symptoms and the diseased Changes in the Follicles*. Headach was absent in one case only out of forty-two fatal cases. As it is the first symptom, it cannot be supposed to be the consequence of lesions which it precedes; and, as it does not increase gradually, at least in the majority of cases, but after a few days diminishes, its course is contrary to that of the disease in the follicles. Stupor is an important symptom: it is essentially adynamic, as it is always connected with prostration of strength. Two opinions have been urged as to its origin: the one that it was a late symptom, coming on when the constitutional powers were becoming exhausted; and the other that it was the effect of ulceration of the mucous membrane, and the absorption of pus, &c. into the system. That neither of these opinions is correct will appear from the facts that, in four cases out of twenty-nine in which stupor was present, it commenced before the eighth day, that is, before ulceration; and in twenty-three of these it was well marked many days before the eighteenth day, on which, as a rule, ulceration begins. Acute delirium does not appear to be connected with this change. Its connexion with diarrhœa is a more important enquiry. In forty cases out of forty-two there was diarrhœa; thirty-four out of forty had it on their entrance, and six after their admission into the hospital; and in these six it commenced on the fifth, sixth, seventh, thirteenth, sixteenth, and twenty-first days. M. Chomel infers from these data, "that diarrhœa, although it is one of the most frequent symptoms, yet is not found at all stages of the disease, and that neither the enlargement of the follicles nor their ulceration necessarily produces the symptom." We have given both the data and conclusion of M. Chomel, so that each reader can judge for himself. Although diarrhœa is not necessarily produced by diseased follicles, yet it appears to us that the evidence is sufficiently strong to conclude that, when diarrhœa is present, it is the effect of this irritation: for medicine abounds with instances in which the same cause produces in different individuals different effects. If this question could be solved by arithmetical calculations, this inference would not be correct; but in this case our judgment is to be formed from probable not demonstrative evidence,—from evidence, in fact, admitting of degrees. The

same change, as far as we have the means of judging, does not always produce the same symptom even in those diseases which fall immediately beneath our own cognizance, as affections of the eyes: indeed, even a constant lesion, as a tumour in the cranium, may produce intermittent symptoms, or none at all. We therefore require evidence of a more exact nature than the subject admits of, if no allowance is made for comparatively few exceptions. This is not a mere contention for words; for the great advantage of studying morbid anatomy is to endeavour to discover the connexion of the lesions with the symptoms or signs they produce.

M. Chomel in his general conclusion comes nearer to our views of the subject than in the passage previously quoted, but still we think he is too cautious in his inferences. He says, "the conclusion from all these facts is, that the various morbid changes of the follicles and mesenteric glands are not revealed to us by any particular phenomenon, and that all the symptoms, excepting perhaps diarrhoea, abdominal pain, and gurgling, are the expression of the influence of the disease on the whole system, of the disorders into which it throws the principal functions; and they are the effect of the disease itself, rather than of the lesion of the follicles."

M. Chomel next describes the *changes which are not constantly met with*. As our space will not permit us to dwell minutely on all, we shall only enter particularly on those concerning which there has been some difference of opinion.

*Stomach.* The colour of the mucous membrane is sometimes red or approaching blue, but, if there is no change in consistency or thickness, the colour cannot be regarded as denoting inflammation, unless symptoms of gastritis have preceded death. Symptoms of pain, &c. in the stomach are rare in the last days of typhus, when the patient is comatose. There was softening of the stomach in fourteen cases out of forty-two; in ten of these the mucous membrane of the great cul-de-sac was softened; in two the greater part, in one the whole, mucous coat; and in one all three coats. One in three appears at first sight too large a proportion to be accidental, but careful pathological researches have shown that this appearance is of little value; for that it is not more frequent in typhoid fever than in other fatal diseases. Thus, of twenty-four subjects who died of pneumonia in M. Chomel's wards, there was softening of the gastric mucous membrane in eight; in ten cases of peritonitis, three; in five who died of smallpox, two; and in other diseases in like proportion. The mucous membrane is rarely thickened: thinning often coincides with softening. In no case did M. Chomel meet with ulceration; M. Louis has in four instances.

*Intestines.* The alterations of colour are various. Generally the duodenum and jejunum are of a deeper colour than the rest of the small intestines. Deep redness often depends on position, as when there are zones of red separated by equal portions perfectly

pale; or often when the lower part of the ileum alone is of a vivid red, from being thrust, by the distended stomach and large intestines, into the cavity of the pelvis. That redness often depends solely on position is seen where a few inches of the ileum near the cæcum are quite pale, whilst the rest is high coloured; the attachment of the cæcum preventing this portion from falling down: in this pale part the diseased follicles are most numerous. The redness is not greater around the diseased glands than at some distance. The colour of the mucous membrane of the large intestines is less changed. Softening of the mucous coat of the intestines is uncommon.

*Connexion of the Symptoms with the Changes in the Gastro-Intestinal Tube.* In only two cases out of fourteen, in which there was softening of the gastric mucous membrane, was there vomiting at an early stage, and in one other during the last few days. Of twenty-eight cases where no softening was found, there were five in which vomiting was a prominent symptom. Sensibility of the epigastrium was not greater where there was softening than where there was none. It does not seem that any change in the stomach during fever is marked by a prominent symptom; and a similar remark applies to the affection of the mucous membrane of the intestines.

Sanguineous infiltration of the mucous membrane of the intestines may be confounded with simple redness. The membrane is two or three times as thick as ordinary, having the shining and trembling aspect of a layer of black or red jelly spread over it. It is produced by sanguineous infiltration of the cells of the mucous membrane. Blood can be squeezed out by pressure with the handle of the knife, so as to give the membrane its natural appearance. It varies in extent from four inches to two or three feet; it is always continuous, never in zones, or in the most depending parts. It was found in seven out of forty-two cases: two of these had suffered from intestinal hemorrhage; a third had vomited blood; in two others blood was found in the small intestines; and in the remaining two it was, as in the other cases, easy to press out a sanguineous fluid. It is not certain that these two might not have had bloody stools, as in an hospital they might have been overlooked. There is an obvious connexion between this state and intestinal hemorrhages: of six cases where this symptom was present, there were four where this change was observed. It throws some light on the anatomical condition of the mucous membrane from which blood is poured, and refutes the common opinion that the blood flows from a vessel opened by ulceration. In four instances of death from other diseases, in which intestinal hemorrhage occurred, this appearance was found.

*Spleen.* Next to the intestinal follicles, the spleen is most frequently diseased. In almost every case where death takes place during the acute stage it is enlarged; but, with two exceptions, this

was not the case in those who died early, or after the twentieth or twenty-fifth day. In ten cases out of forty-two it was softened, as well as enlarged, and in three almost fluid. In some instances it was harder and drier; generally when death took place after the thirtieth day. These changes cannot be connected with any particular symptom.

*Liver.* Sometimes softened: Louis observed this in about half his cases.

*Organs of Circulation, &c.* The blood is often deficient in fibrine. In thirty cases, in which the blood remaining in the heart and vessels was carefully examined, there were small fibrinous clots in six only; and in two of these acute inflammation had complicated the fever. Air has been found in the blood-vessels, particularly in the veins: in these cases which resemble thus far those that have been fatal from exposure to mephitic gases, the blood was in an advanced state of decomposition. Petechiæ and ecchymosis are observed during life in such cases, so that the decomposition of the blood probably commenced before death.

*Heart.* In seven cases out of thirty, there was softening of the heart, coincident generally with a similar state of other organs; in seven other cases out of the same number, the walls were flaccid. The softening was attended with paleness. Sometimes the inner membrane was a lively or deep red; in no case were there inflammatory depositions. The red condition often observed of the inner membrane of the aorta was probably owing to imbibition, as it was in proportion to the putrid state of the blood. Some experiments by Trousseau and Rigot strengthen this opinion: they discovered that a portion of a white and healthy aorta, steeped for a few minutes in the blood of some horses, particularly of those who had died of malignant diseases, was coloured of a vivid red: they also proved that, in living horses, the arteries inflamed with great difficulty, although irritated in various ways. The softening of the heart cannot be attributed to inflammation, as it coincided with loss of colour and with softening in the liver, spleen, &c.; all of which are not likely to have been inflamed at the same moment.

*Lungs.* Congestion of the posterior and inferior parts is frequent; for, as the vital strength declines, physical laws operate, and fluids accumulate in the depending parts. This was the case in eighteen instances out of forty-two, sometimes connected with softening: in eight cases there were marks of pneumonia, and in two pleuritic effusion.

*Brain.* Although its functions are most disturbed, yet it suffers fewest appreciable organic changes. Delirium, present in half the cases, is not explained by the pathological changes. Œdema of the meninges and bloody points are found, it is true; but these are met with as often in cases where there has been no affection of the cerebral functions as when they have been present, and also as frequently in other diseases as in this.

In thirty-eight carefully observed cases, there was

Injection (venous) of the meninges in	4
Edema of the meninges	7
General but slight softening in	6
Serous effusion in the ventricles, (from a teaspoonful to a dessert-spoonful)	12
Bloody points	5
Increased density	2
Healthy state	15

*Emphysema.* Occasionally the body becomes emphysematous immediately after death.

The next division of the work before us embraces a subject concerning which much discordance of opinion has existed, the *Causes of fever*. The causes of diseases in general are sufficiently obscure, and the real amount of our knowledge of them is very small; yet few subjects are written about and discussed with greater prolixity or less doubt. The following table exhibits the exciting causes in 116 cases which fell under M. Chomel's observation, as far as could be ascertained by enquiry.

5 patients attributed it to sudden cold when heated,
6 to deficient or bad food,
4 to mental depression,
5 to debility from other diseases,
3 to the action of a purgative taken for some indisposition,
1 to excess in drink,
5 to excessive fatigue,
2 to a violent physical shock,
1 to the effects of the sun,
5 were exposed to circumstances favorable to contagion,
79 no cause could be ascertained.

## 116

This table is much more satisfactory than the usual plan of enumerating the exciting causes of any disease, and it is the only method by which a writer can give his readers an opportunity of judging at once of the value of any statements. Many of our readers will feel surprised at seeing that no cause could be discovered for seventy-nine cases of fever out of 116; but M. Chomel's name guarantees the accuracy of the table, and his well-known diligence prevents our attributing the circumstance to any want of care in the examination.

Other tables follow, in which no cause could be discovered in nearly half of a large number who were affected with pneumonia. We can hardly believe that this is possible; and yet the same proportion of cases have most probably presented themselves to our own notice, in which no cause of disease could be ascertained, which have impressed our attention less strongly than they should do; owing perhaps to one of the defects in our mental constitution,



by which positive evidence makes so much greater an impression than negative; the frequent absence of any circumstance striking us with much less force than its occasional presence.

The tables showing the exciting causes in pneumonia are well worth comparing with the one given above. Out of 137 cases, twenty-eight attributed the attack to exposure to cold; a small proportion, indeed, if we judge by our own traditional prejudices in favour of this agent, but a much higher number than any we shall find in the column of the previous table. In pneumonia, the preceding operation of cold is too frequent for us to consider it as a mere coincidence; but in fever we cannot draw the same inference: twenty-four who were attacked with pneumonia were debilitated by previous catarrh; whereas fever, with rare exceptions, attacks those enjoying perfect health: pneumonia attacks all indiscriminately, not so fever: twenty cases of pneumonia were second attacks, whereas, in 130 instances of fever, the individuals had never suffered previously. These comparisons show that there are marked differences between fever and inflammation.

The question as to the age of those most subject to fever is examined in the same tabular way. It is most frequently met with from eighteen to thirty, when the bodily powers are greatest; it is rarely observed after forty, and perhaps no case is on record where the patient was more than fifty-five. From those under fifteen being sent to the hospital for children, these details do not embrace the young. M. Chomel, however, has no fear that he shall deceive, when he says that the frequency diminishes until ten, beneath which age it is very rarely met with. Another circumstance peculiar to the typhoid fever which M. Chomel describes, is that more than two-thirds of the whole number of patients had lived in Paris less than two years, and only two were born in Paris. It appears to be necessary to be habituated to the climate to resist the causes, whatever they may be, of this affection.

The question of *Contagion* is next examined. The majority in France are anti-contagionists, in England the other way. The direct evidence in favour of contagion, in the table of causes previously given, is very slight; when compared with the proofs of contagion, apparently of the most convincing character, brought forward by Dr. Tweedie, of the London Fever Hospital; Dr. Marsh, of Dublin; Dr. Alison, of Edinburgh; and Dr. Millard, of Glasgow; each of whom had considerable experience on an extensive scale. M. Chomel impartially states their evidence, but adds that sufficient anatomical descriptions of the state of the intestines cannot be obtained, to prove satisfactorily that the typhoid fever of Paris and the typhous fever of London, Dublin, and Edinburgh, are one and the same disease. He concludes a very clear and fair chapter by three propositions:

1. That the general opinion of French physicians that the typhoid fever is not contagious, is not proved.

2. That, if it is contagious, it is only so in a feeble degree, and with the concurrence of circumstances at present undetermined.

3. That, if ulterior observations prove the identity of the anatomical lesions in typhous and in typhoid fever, the identity of the two affections will be proved, as well as the question of contagion.

M. Chomel alludes (as he could not fail to do,) to the little attention paid in this country to the state of the follicles of the intestines.

*Varieties of Typhoid Fever.* The sketch of fever which has been given embraces all the symptoms, but in no one case do they all meet; some symptoms excluding others, or being constantly united. The concurrence of particular symptoms constitutes varieties of fever, to which distinct names have been given by authors, as if they were distinct affections.

1. *Inflammatory Typhoid Fever.* This is frequent, particularly in winter: those of a sanguine temperament, and from twenty to thirty years old, and subject to hemorrhages, are liable to it. When well marked, the peculiar symptoms occur early; such as fulness and frequency of the pulse, hot skin, dryness of the throat, thirst, loss of appetite, oppression, and other general symptoms common to inflammatory affections; but, besides these, there are constant headach, muscular debility, disposition to hemorrhages, dry tongue, diarrhœa, typhoid and miliary eruptions. The form changes generally to the adynamic and ataxic about the seventh or eighth day, sometimes earlier. In two cases only out of forty-two fatal ones did the inflammatory form continue throughout the disease, and in one of these cases death was produced by perforation of the bowels. During five years, during which these cases were collected, M. Chomel saw no other instances of inflammatory fever which were fatal, and he has never met with inflammatory fever which was not a variety of the typhoid affection.

2. *Bilious Typhoid Fever.* Most frequent in summer and autumn. In two cases out of forty-two fatal ones, there were bilious symptoms at first, giving way to more serious ones. Five others were cured where these symptoms continued throughout. The symptoms are—yellow skin, especially around the lips and *alæ nasi*; frequent nausea, and vomiting of bile; bilious stools; bitterness and dryness of the mouth; yellow or greenish coating to the tongue; tinnitus aurium; depravation of taste, smell, and touch. The duration of these symptoms is seldom beyond the seventh to the fifteenth day.

3. *Mucous Typhoid Fever.* This, like the bilious, seems to depend much on localities: it is seldom well marked in Paris. The symptoms are—great debility; pale or swollen face; muscles soft; mouth pasty; breath, saliva, perspiration, and urine, of an acid odour; stools mucous or glairy: after a short period it is replaced by the adynamic or the ataxic form. Two out of forty-two fatal cases had these symptoms.

4. *Ataxic Typhoid Fever.* One of the best marked, most frequent, and most generally fatal forms. Ten out of forty-two were ataxic: four of these were unmixed throughout, and death ensued on the eighth, ninth, and twelfth days; two were preceded by the inflammatory, and two by the adynamic symptoms. This variety is distinguished by a remarkable disturbance of the functions of relation; as delirium, cries, threats, efforts to strike or escape; sometimes by mild delirium, heaviness, alteration or perversion of the senses, twitching of the tendons, convulsions, rigidity, &c. In other cases there is a remarkable discordance between the symptoms: thus, whilst the pulse is rapid, the skin is not hot, or one part is cold whilst the rest is very warm; or, whilst the face expresses a disease almost inevitably mortal, the pulse is hardly affected. Frequently the delirium is not in proportion to the other symptoms, either less or greater. Sometimes a sudden improvement leads the practitioner to doubt his diagnosis: the benefit is, however, temporary only. In some cases the patient is perfectly restored to his senses before death. Ataxic symptoms do not belong exclusively to fever, but may coexist with visceral inflammation, puerperal, eruptive, and other acute diseases.

5. *Slow Nervous Typhoid Fever.* The symptoms are—a general indifference, great lassitude, heaviness, dejection; slight headach; pulse frequent and weak; constant wakefulness; no thirst, although the mouth is dry; if there is delirium, it is not violent, and consists of a confusion between thought and action; the patient mutters: in unfavorable cases the strength diminishes, and the stupor increases, with other adynamic symptoms; in favorable ones, the patient gradually throws off the drowsiness, or suddenly, as if awaking from sleep.

6. *Adynamic Typhoid Fever.* The most frequent form, adynamia being marked in twenty-six out of forty-two fatal cases: in ten of these, adynamic symptoms were present throughout, and in sixteen at the termination only. The predominant symptom is muscular debility, which may gradually simulate paralysis. These patients, with every appearance of strength, can neither lie down nor rise up in their beds without help, or even turn on one side. Towards the termination they lie immoveable, and after many hours are found in precisely the same position in which they had been left. There is commonly great mental debility, commencing with early stupor. In bad cases, or at an advanced period, the patient does not answer questions which are put to him, and his unmoved features show that he has not understood them: after a loud question he may direct his eyes momentarily towards the speaker. Headach diminishes as adynamia increases, and is replaced by wakefulness, or constant unquiet dreams. The mouth is covered with a thick layer of dry mucus; great meteorism; often no sensibility on pressure; stools generally fœtid and involuntary; sloughing of the parts pressed upon; urine and sweat fœtid; pete-

chize; skin at first warm and dry, afterwards cold; pulse feeble, trembling, at first rapid, latterly slower. This state sometimes lasts long.

Such is the division of the varieties of typhoid fever which M. Chomel approves: he judiciously adds, that they will commonly be less defined, and often running into one another. This caution is applicable to all nosological divisions, for they are the work of man, not of nature; and, if this is not kept in view, the student in particular will be constantly deceived and led astray. The principle on which divisions of fever are made is of importance, as our judgment is liable to be influenced by mere names, and for this reason there are difficulties which beset all classifications. The school of pathological anatomists, of which M. Chomel is one of the most ardent disciples, has improved our knowledge of fever, by leading our attention to the state of the particular organs, which they have shown are subject to inflammation, arising during the course of the disease; whereas the older writers\* directed their attention almost exclusively to the general condition of the patient. Both the general state and the intercurrent inflammations are important grounds for divisions, and neither can with propriety be exclusively adopted. The division which Cullen adopted of synochus, synocha, and typhus, obscured the subject by directing the attention to the general condition of the patient, to the neglect of local complications. On the other hand, divisions founded on the local complications only would be defective, as they refer in no way to the peculiar character of the fever itself. Dr. Southwood Smith has endeavoured, in his work on Fever, to found his divisions on both these principles, and, although his classification is rather too complex, its principle is correct. M. Chomel has adopted the exclusive principle on which Cullen based his system; and, for the reasons just stated, we do not think it is the one which is likely to be the best guide to treatment; the great object of our art. We shall make some further remarks on this subject when we arrive at its practical application.

*Diagnosis.* This is sometimes extremely difficult. It is prudent not to give a decided opinion during the first three or four days; for, when the symptoms are not very decidedly marked, they differ little from the precursory fever of many eruptive diseases, as small-pox, scarlatina, measles, of some catarrhal affections, or latent visceral inflammations. The long duration of the febrile condition is an important characteristic. Whenever febrile symptoms, which cannot be referred to any appreciable lesion, last eight or ten days, there are strong grounds to presume that the glands of Peyer are diseased, and when, on the other hand, a febrile disease, of the nature of which we were doubtful, terminates in a few days, it is not this affection. Between the sixth and twelfth days, symptoms which clear up the diagnosis generally appear, such as meteorism, typhoid

\* Sydenham was an exception.

eruption, stupor, epistaxis, hemorrhage from the bowels. At a later period still, there is less difficulty; for, even if the symptoms during the first and second periods have been absent, those which belong to the third remove all doubts: these are intestinal hemorrhages, sloughing, involuntary stools, and other marks of adynamia. Enteritis is one of the diseases most likely to be confounded with it; but in enteritis the fever is less, and the stools are more numerous and painful, the diarrhoea lasting during the whole disease. In some cases of fever, diarrhoea is a late symptom or is absent. The prostration of strength is much less, and adynamic symptoms, as stupor, delirium, involuntary stools, as well as the eruption, meteorism, and sloughing, are rare. It may last many months without producing that debility which typhoid fever does in a few days. When a patient is first seen in the adynamic state, and no history of the case can be obtained, the diagnosis becomes difficult. There are many diseases, even then, with which it cannot be mistaken. The acute visceral inflammations of old men, for instance, speedily put on an adynamic character, but their age prevents the suspicion of typhoid fever. Phlebitis and partially retained placenta may simulate this affection, but the local causes of the disease prevent error. It is rare also in the puerperal state. In some cases the symptoms throughout are so mild as to leave us in doubt. When a disease is prolonged to the fifteenth day, and the only symptoms have been loss of appetite, malaise, greater or less fever, some liquid stools, without any marked change in the muscular contractility, we must regard it as typhoid fever; no other disease follows a similar course. Experience shows that from the fifteenth to the twentieth day, or later, some well-marked symptoms may occur, and, if death has accidentally taken place, the characteristic lesions have been discovered. The progress of the disease, more than the actual symptoms, distinguishes some ataxic cases from cerebral inflammation.

*Prognosis.* Few diseases are so fatal. Out of 147 cases in the clinical wards of the Hôtel Dieu, between 1828 and 1832, forty-seven died, or one in three. Though a mortality of one in three is a very large proportion, any inferences unfavorable to the treatment of fever should for many reasons be made with caution and charity. The mode in which patients are distributed to the various hospitals in Paris, is brought forward as one excuse for such fatality. All the hospitals being under the direction of government, a central board of medical men is appointed to examine the patients who apply for relief, and to distribute them among the different hospitals. This board meets near the Hôtel Dieu, so that the severest cases of fever are often sent there, as it is the nearest place. M. Chomel is also the professor of clinical medicine, and the most serious cases are sent to the clinical wards. These reasons would account for a greater apparent mortality than under other circumstances, if we did not find that during several years, whilst M.

Chomel was physician to La Charité, the mortality in about the same number of cases was rather greater. M. Louis founded his "*Recherches sur la Gastro-entérite*" on 138 cases of fever treated by M. Chomel, and out of these there were fifty deaths.\* The average of one in three seems to be therefore independent of these local causes. In order however to come to any fair conclusion, we should have the means of comparing these results with others in the same city, founded on an equal number of cases treated in a different manner. Particular modes of treatment are often brought forward as useful, and the proportion of successful cases seems to justify the means recommended, but a more extensive series of experiments with the same remedies overthrow all the previous conclusions. For instance, in a subsequent part of this volume, M. Chomel gives tables of the mortality during his experiments in treating fever with the chlorides: in 1831-32, when the first trial was made, the ratio of deaths was one in ten, or it might be said one in nineteen; whereas in the next two years it was a third! Again, no comparison between the mortality in the typhoid fever in Paris and that in this country could be safely drawn, as there are no means of estimating the degree of severity of the prevailing epidemics in the two countries. If it were not so, the returns furnished by our fever hospitals would be decisive against M. Chomel. But, after making all these allowances, we still must conclude that no benefit could have been derived from any mode of treatment, where the mortality was so high, and so permanently high, for a long series of years, equal indeed to that of malignant cholera itself. As we feel ourselves justified in this country in attributing success in dangerous cases to the remedies employed, which are much more decided, we may safely strengthen our criticisms on M. Chomel's treatment by a reference to this high ratio of mortality. This we shall reserve for its proper place. We shall not dwell on the details of M. Chomel's tables illustrative of the prognosis, but only give the additional and more correct information which he has brought forward. Without questioning the utility of weighing each symptom to discover its value in prognosis, yet we would put the younger of our readers on their guard against relying too much on this kind of information. It is not one symptom on which any correct decision can be formed, but on the case as a whole, and experience alone, that is, attentive observation and reflection upon numerous cases, can give the practitioner any feeling of certainty as to his decision of the termination of a doubtful case. Constant errors are made in judging of the probable issue of diseases, and particularly by those who have had limited experience: the power of distinguishing diseases is much more quickly acquired.

Fever is less dangerous in patients under eighteen years of age, and more dangerous after the age of forty. No appreciable diffe-

\* *Recherches sur la gastro-entérite, &c. par P. Louis. Vol. 1. p. ix.*

rence is observed in regard to sex. Previous feebleness of the system does not appear to act unfavorably. Two out of four patients who attributed fever to moral causes of depression died. Of sixteen patients who admitted that they had taken stimulating drinks at the commencement of the attack, three only died. M. Chomel concludes that those cases are most dangerous where the attack was sudden. The tables given, however, indicate the opposite, the mortality being rather less than one in three where the attack was sudden, and slightly above one in two where there were premonitory symptoms. (P. 433.) There is probably some numerical error. If during fever there is a decided remission, followed by an aggravation of the symptoms, the termination is generally fatal. There is less danger when the form of the disease does not change: the ataxic is in such cases the most fatal. Complicated cases are very fatal: thus, of thirteen cases of inflammatory adynamia, eight died. Many symptoms, when they become intense, are important in the prognosis. When delirium is early and violent, it is very unfavorable. Of forty-two fatal cases, twenty-two were violently delirious. When it consists in a dreaming state from which the patient can be roused, there is less danger. Of eighty patients who recovered, twelve had this mild delirium. Involuntary evacuations, when passed without consciousness, constitute a bad sign. Of thirty cases, in which this symptom was present, thirteen died. Constant and general twitching of the tendons is highly unfavorable. In five cases with general convulsions death was speedy. Coma is one of the most fatal symptoms; it should be distinguished from stupor, in which the patient's attention can be roused. Of seven patients with intestinal hemorrhage six died. M. Chomel does not think deafness unfavorable. The expression of the face is important: when emaciated and shrunk, (*facies Hippocratica*), death is at hand; whilst improvement in intelligence of expression is often the first sign of amendment. If the pulse exceeds 120 or 130 it is bad, when 150 or 160 death is near. When it becomes slow after having been rapid, without symptoms of improvement, it is a fatal symptom, unless proper means to relieve the patient are not employed. Perforation of the intestines, and erysipelas of the face, are generally fatal complications. The danger of inflammation of the lungs is in proportion to its extent and to the general condition of the patient. When it occupies a considerable portion, or the whole of one lobe, and is not arrested, it is fatal, even before it passes into the second and third stage. Circumscribed pneumonia is often discovered in those who have extensive suppurations on the sacrum, and is dangerous. As pneumonia is often latent, considerable attention should be paid to the lungs. In three patients inflammation of the larynx and epiglottis took place, and was fatal. The injurious effects of sloughs on the sacrum, heels, &c. have been exaggerated. In seven cases, only three died, and in those which recovered the extent of

the ulcers was truly alarming. Abscess in the external parts was observed in six, all of which recovered. They were not found in parts subjected to pressure.

*Treatment.* M. Chomel employs the rational mode of treatment, in which the disease is treated according to the symptoms which may be present, and not according to any uniform plan. By this mode, none of the specific modes of cure is excluded, though none is exclusively adopted. The antiphlogistic, the antiseptic, the tonic plans are not individually adhered to in every case, but are applied according to the form which the fever may assume. This is called rational treatment, as it supposes that the practitioner reasons on every case; it is also called symptomatic, from the attention which is necessarily paid to symptoms.

In the simple uncomplicated forms, M. Chomel prescribes refreshing drinks, such as lemonade, orangeade, solution of syrup of currants, pure water taken at short intervals, emollient fomentations and poultices to the abdomen, if it is painful; washing the body with vinegar and water, or simple baths, if there is much heat; mucilaginous lavements repeated many times daily; cold compresses to the forehead, if there is much headach, and warm or mustard poultices, if there is any tendency to drowsiness or forgetfulness. He also commences by taking some blood from the arm, as he agrees with M. Louis that this has a favorable influence on the duration of the disease. If the headach is intense, or if there is much abdominal pain, leeches may be applied behind the ears or to the anus. If the stools are scanty, mild laxatives, such as whey with tamarinds, neutral salts, &c. If there is diarrhoea, it should be restrained by mucilaginous drinks, gum or rice water, small lavements of starch. Free air and absolute cleanliness are indispensable: great care should be taken that the urine and fæces passed involuntarily should be immediately removed. When amendment commences, the emollient drinks may be exchanged for aromatics and gentle bitters: diet improved, such as vegetable jellies, weak broth, wine and water, &c. When the symptoms are more urgent, this expectant treatment is replaced by a more vigorous one.

*Treatment of Inflammatory Typhoid Fever.* This requires the antiphlogistic treatment according to the age and strength, but by no means with the same vigour as in simple inflammations; for it must be remembered that adynamic symptoms frequently follow inflammatory; there is therefore a necessity of husbanding the powers of the patient. Another reason for the same caution is that inflammation frequently springs up in the most debilitated subjects. Therefore, after taking blood once or twice, generally and locally by leeches, these means must be laid aside, and complete abstinence, with the remedies just mentioned, trusted to. The only cases where general bleeding is indicated in the second and third periods, would be when inflammation attacks patients who are not greatly debilitated. Great caution is required in all such cases.



*Treatment of Bilious Typhoid Fever.* The bitter taste in the mouth, great thirst, &c. cause the patient to request cooling drinks, ripe fruits, &c., which should be allowed. M. C. has not found emetics and purgatives so useful, nor bleeding so dangerous, as the physicians of the last century state. Emetics may be used at the commencement of a sudden attack, if the stomach appears to be loaded, but cooling drinks and fruit generally relieve the bad taste in the mouth.

*Mucous Typhoid Fever.* This is treated like the simple, except that acid drinks are given instead of emollients, and slightly bitter and aromatic infusions of indigenous plants, such as are made no use of in this country except by the poor, and therefore not at all equivalent to our pharmaceutical bitters and aromatics.

*Treatment of Ataxic Typhoid Fever.* The treatment of this variety is very difficult: the antiphlogistic, tonic, and antispasmodic plans have all had their exclusive supporters. The treatment however must vary. If inflammatory symptoms are present, the antiphlogistic treatment, and if the adynamic, tonics must be recommended. When there is no precise indication, the expectant treatment is to be followed.

*Treatment of Adynamic Typhoid Fever.* When there is stupor, unusual prostration of strength, weakness of the pulse, faintness in the sitting posture, and involuntary passing of stools and urine, we must use bitters and aromatics, such as bark, chamomile, and sage in draughts, lavements, baths, and external applications; with wine, camphor, and ether: if the symptoms increase, the doses must be larger, and the wines of Spain given instead of those of France. Extract of bark, by the mouth and in lavements, in doses of one to two ounces a day, is given by M. Chomel in preference to quinine, if the stomach will bear it, as he doubts whether the sulphate of quinine contains all the tonic powers of bark equally with its febrifuge and antiperiodic principles. In this state tonics and excitants, instead of aggravating the lesions of the intestines, exercise a favorable effect upon them. The intestinal ulcers are analogous to cutaneous ulcers in similar subjects, which are improved by stimulating applications. In three instances where the patients died during the tonic treatment, the ulcers in the intestines were evidently cicatrizing. The tonic treatment was followed in nine patients, all of whom when it was commenced were in an alarming state of prostration, and six of these recovered. It is important that tonics should be given before the strength is too much exhausted, and yet not during reaction. The exact time must be determined at the bed-side, as no exact rules can be laid down. If delirium or other signs of cerebral congestion exist, wine should not be given, as it almost inevitably aggravates the symptoms. M. Chomel commonly gives wine in spoonfuls, at first once or many times daily, increasing the quantity as debility increases. The lighter wines he gives with other drinks, in the proportion of a fourth, a

third, or half; the stronger wines pure. In some cases the benefit is immediate: the pulse rises, the heat of the skin increases, and the expression improves. Ether is particularly useful when it is necessary to raise the powers rapidly, but its action is transient; it should be given with bark. Camphor is only employed by M. C. in lavements with bark, when debility is great. Bark in infusion, decoction, or still better only macerated in water, and sweetened with syrup of lemon, is one of the best drinks. Also infusions of serpentaria, cascarilla, and sage. The tonic treatment is rarely necessary in the first stage, and should never be tried then except with great reserve. In the second and third stages we may employ it with more confidence and energy. Several excellent cases are detailed in which success followed this treatment in apparently hopeless cases. M. Chomel mentions the application of revulsives and of warm and cold baths, but states nothing decidedly as to his own opinion of their efficacy.

*Treatment of Particular Symptoms and Complications.* Hemorrhages are rarely so profuse as to require special treatment. Epistaxis may render plugging the nostrils necessary, and if the discharge of blood from the bowels is great, cold or iced water in draughts, lavements, and external applications, extract of rhatany, &c. should be tried. Great care should be taken to prevent the formation of sloughs: when the fever has lasted any time the parts pressed on should be examined, and if there is that redness over the sacrum which precedes sloughing, the patient should be so supported as to lie on the side or even on the belly. When the eschar has formed, it should be covered with diachylon plaster; when it has fallen, the wound should be dressed as an ordinary ulcer. M. C. has not tried Dr. Arnott's water bed. The treatment of local inflammations attacking a debilitated subject is very difficult. Local bleeding, particularly cupping, must be cautiously employed, if the strength will permit. But generally the adynamic condition forbids it, and the tonic treatment must be pursued, whilst the local disease is combated with epispastics, as blisters and rubefacient plasters. In erysipelas of the face, the blood should be directed towards the feet by sinapisms, or very hot flannels covered with oiled silk. All the cases of perforation of the intestines which have fallen under M. Chomel's immediate observation have been fatal. Perfect rest and abstinence was the treatment adopted, but if other cases should occur he proposes to try the plan suggested by Dr. Graves of Dublin, and put into execution by himself and Dr. Stokes, of giving large and repeated doses of opium, so as to preserve the intestines in a complete state of rest, in order to prevent the further escape of fecal matter into the peritoneum, and to allow nature to close the opening by adhesive inflammation. Opium is admirably calculated to fulfil this intention, by putting a stop to or weakening the peristaltic action of the bowels, and by soothing the excessive pain. These accomplished physicians have had some

cases to justify the utility of the practice, and although it has not often succeeded, yet it has never wholly failed to assist nature under this distressing accident. We would refer those who desire complete information on this important subject to the original paper of M. Louis on perforation of the intestine in his "*Mémoires ou Recherches Anatomico-pathologiques*," p. 136 et seq.; to the 5th vol. of the Dublin Hospital Reports; or to an able article, embracing both pathology and treatment, by Dr. Stokes, in the *Cyclopædia of Practical Medicine*, (art. *Peritonitis*.) The state of the intestinal tube will explain the frequency of tedious convalescence, and the accidents to which those are subject who are recovering from this disease. When the heat of the body diminishes, even although the frequency of the pulse continues, some liquid food may be given, such as veal and chicken broth, "*le lait de poule*," milk and water, &c. augmented gradually until solid food can be digested. If the appetite does not return, and the patients are very weak, bitters should be given. Country air is very favorable to convalescence.

Such is a sketch of M. Chomel's mode of treatment. The objection which we made to his adhering exclusively to the old division of varieties, which was based on the general condition of the patient, from its tendency to direct the attention entirely to this condition, to the neglect of the state of the various organs, is borne out by these directions for treatment, in which local complications are almost entirely overlooked. The minute attention which M. Chomel had given in the previous chapters to the various organic changes in fever appears to be of little or no use in his practice, as the practical rules relate almost wholly to the general state of the system on which his varieties depend, and which he admitted could not be referred to any local cause. The application of the information derived from morbid anatomy is made to the diagnosis and prognosis, but does not extend to the treatment. There are undoubtedly two opposite states of the system to which the terms inflammatory and adynamic may be applied, which appear to exist independently of local disease, and to depend greatly on the "constitution" (whatever that may be) of the prevailing epidemic; and practitioners should be well aware of those states, and keep them in view in the treatment, but the due recognition of complications of fevers from inflammations of various organs is of vast importance. Visceral inflammation may exist with either of these opposite general conditions, and the success of any treatment must depend on the detection of the local disease, and the modification of the means made use of, according to the general state of the patient. M. Chomel, we think, has not applied his knowledge of morbid anatomy where it would be both applicable and beneficial. He has stopped short too soon; he has not carried out his principles as far as they will legitimately go. With other modern pathologists, he has confirmed, by dissection, the views of Sydenham, as to the frequency of local complications of fever, derived from an

examination of symptoms alone, but he has not followed to the full extent the same example, by making the information thus acquired subservient to the great object of our art, the cure of disease.

There can be no doubt, from these directions for treatment, that M. Chomel leaves much more to nature than we do in this country. The active antiphlogistic treatment is confined to bleeding and leeching; and the cautions against producing adynamia, and the directions to husband the strength, indicate that M. Chomel regards depletion as an "anceps remedium."

That cautions are not necessary against depleting too largely in fever, even when inflammation is present, we by no means wish to assert; but it must be borne in mind that these cautions come from Paris, where what is called an English bleeding is hardly considered justifiable in the most acute inflammations of vital organs.

If one or two small bleedings and leeches fail to remove inflammation, M. Chomel has no other remedies than complete abstinence, emollient lavements, diluents. In this country we should imagine such directions meant that, if bleeding failed, the case was altogether hopeless, as far as our remedies were concerned; and in the majority of cases this would probably be the truth. Those powerful antiphlogistics, purgatives, are not mentioned, but in their stead emollient lavements.

Purgatives appear to be banished, from a fear that they may increase the irritation of the follicles of the intestines; a fear which has sprung from too exclusive devotion to morbid anatomy. That active purgatives, particularly in the early stages of fever, will increase the follicular irritation, is a completely theoretical objection. The reasoning on which it is founded will not bear examination, and our experience in this country experimentally contradicts it. M. Chomel has remarked with some surprise that he has found ulcers of the intestines cicatrizing in patients who died whilst under a course of tonics and stimulants, instead of being aggravated by them: such a remark could have been only owing to his imagining *à priori* that the passage of stimulants over ulcers in the intestinal canal must injuriously irritate them. We venture to hope that M. Chomel would feel equally surprised and pleased with the effect, in many cases, of purgatives, although their exhibition would at first be opposed to his notions of their effects on the mucous membrane. It is pleasing to see, by some of the recent French periodicals, that MM. Andral, Guersent, Baudelocque, and other physicians attached to hospitals, are conquering their prejudices against purgatives, and trying them in fever: the results we shall look forward to with curiosity and interest. Another remedy of great power, particularly in those cases of inflammatory complication where depletion cannot be safely persevered in, is calomel, given in small and repeated doses, especially when combined with opium, so as to affect the system. This is not alluded to by M. Chomel, and its efficacy does not appear to be recognized or even

tested in Paris. The employment also of the "cold dash," or pouring cold water from a jug over the head, where there is cerebral inflammation, is overlooked. It is a remedy of extreme value: in the ataxic variety of typhus with furious delirium, we have seen it almost instantly produce tranquillity. M. Chomel is most vigorous in his tonic and stimulant treatment of the adynamic stage, and some of the cases which he has appended are instances of success even under the most disadvantageous circumstances. The water-bed of Dr. Arnott is particularly adapted to cases of fever where there is extensive sloughing: the only complaint which patients make to it, that they cannot alter their position without great difficulty, would not apply to these cases, where voluntary motion of any sort is frequently impossible under any circumstances, and where it is advantageous that the patient should remain in the position in which he was placed.

The two chapters which conclude this volume are added by M. Chomel himself. The first contains an exposition of the treatment of fever with the chlorides, and a careful estimate of the results. M. Chomel, although evidently a reader of the medical literature of this country, does not seem to be aware that Dr. R. Reid, of Dublin, had, so far back as 1826, made experiments with these medicines in Fever, and published a paper on the subject in the Transactions of the King and Queen's College of Physicians for 1827. M. Chomel states that he was induced to try them, from a hint given him by a young physician frequenting his wards, and from the little efficacy of any known method of cure. He chose the chloride of soda, and exhibited it, not instead of other remedies, but in addition to them. One grain to a grain and a half was dissolved in each ounce of sweetened gum water, or slightly bitter infusion, if the first produced nausea; and the patients were directed to drink as much of this as they possibly could. The greater number took from three to five cupfuls, each holding eighteen ounces. Mucilaginous lavements, containing the same proportion, were ordered night and morning, with lotions four times daily over the whole body of pure chloride of soda. The poultices covering the abdomen were sprinkled with it; a pint was mixed in each bath; and the bedclothes, furniture, and vessels were sprinkled with it many times a day. It was tried in those cases only where there was no doubt as to the diagnosis, where the fever was of a dangerous character; and in the first or commencement of the second stage, as at a later period nothing could be concluded.

During the summer of 1831, five cases were thus treated. The symptoms of the first two were so aggravated, that M. Chomel resolved to wait their termination before he repeated the experiment on others, and, even after six or seven days, there was in one patient so great a prostration of strength, that the chloride was replaced by powerful tonics. Since this time he has often associated them. This patient, as well as the other four, recovered. Of fifty-seven

patients treated in the common way sixteen had died, or about one in three, [one in three and a half.] From November 1831 to August 1832, twenty-three patients were admitted: fifteen were treated with chlorides, and eight otherwise: five of these eight were mild cases, and recovered; of the three fatal ones, two died shortly after admission, and there was some doubt as to the diagnosis of the other. Of the fifteen others treated with chlorides, two only died; and, in one of these, besides the peculiar lesions, there was partial hepatization of both lungs and tubercles. To prove that the thirteen cases which recovered were severe ones, and not selected, the following table of the principal symptoms in each is given.

1st patient. Tongue dry; meteorism; bloody stools.

2d. Extreme prostration; deafness; involuntary stools. Bark.

3d. Delirium.

4th. Delirium; meteorism; involuntary stools.

5th. Fuliginous mouth; considerable physical agitation.

6th. Involuntary stools; trembling of the lower jaw.

7th. Bilious vomiting.

9th. Meteorism; involuntary discharge of stools and urine.

10th. Fuliginous mouth; involuntary discharge of stools and urine.

11th. Delirium; disordered movements; fuliginous mouth; stools and urine discharged involuntarily.

12th. Meteorism; involuntary discharge of urine.

13th. Meteorism; dry mouth; considerable stupor.

If the results of both years are united, it appears that, of twenty cases treated by chlorides, only two have died, and that the death of one of these was owing to double pneumonia and tubercles; so that it might be said, that there were eighteen successful cases to one unsuccessful. M. Chomel, however, considered the number of cases too few to deduce from them any general propositions as to the efficacy of the treatment; and, indeed, during the next fifteen months, the results were far less satisfactory. From November 1832 to March 1834, (when the work went to the press,) fifty patients with typhoid fever were admitted; thirty-seven of whom were thus treated, and thirteen by the usual method. Of the thirteen, there were eight whose symptoms were so mild that the diagnosis was formed tardily or imperfectly: in three others there were complications, (particularly pneumonia,) which prevented the use of the chlorides: two were brought at a very advanced stage: five of the thirteen died. Out of the thirty-seven treated with chlorides, twelve died, twenty-five recovered. Of the latter, four or five were mild cases, and fourteen very severe. Of the twelve who died, one was convalescent when he was cut off by cholera, and, on examination, ulcers of the intestines almost completely healed were found; a second was, when convalescent, attacked with fatal pneumonia; a third, during convalescence, died from perfora-

tion of the lung from tubercles; a fourth was brought into the hospital in an unconscious state, almost dying, and lived but few days; two others had double pneumonia. Consequently, if from the large number of twelve deaths in thirty-seven cases, are deducted three individuals who died, not of typhoid fever, but after its termination, of cholera, pneumonia, and perforation of the lungs, and if these three cases are added to the twenty-five who were cured, and if from the nine other cases are deducted one who took the chlorides only two days, and the two individuals affected with double pneumonia, an almost constantly fatal disease, (more dangerous consequently than typhoid fever,) and therefore having a greater share than the latter in the extinction of life, the number of deaths will be reduced to six, and that of cures be twenty-eight.

From a general view of these details, it appears that, from the summer of 1831 to March 1834, fifty-seven patients have been treated with chloride of soda of whom

forty-one (forty-three?) have left the hospital cured;

sixteen (fourteen?) have died;

that if three who died of other diseases (cholera, pneumonia, and perforation,) after the termination of typhoid fever, are added to the forty-one (forty-three?), and if these three, as well as four others, the particulars of whose cases have been before mentioned, are deducted from the number of deaths, there will be a mortality of nine (seven?) in fifty-three, or nearly one in six (seven and a half?); whilst the mean mortality of cases of typhoid fever treated by the usual method in M. Chomel's wards at La Charité and l'Hôtel Dieu, is one in three. Thus, at La Charité, from 1822 to 1827, of 138 cases, fifty died; in 1827-28, five of eighteen; at the Hôtel Dieu, in 1831-32, sixteen of fifty-one; in all seventy-one deaths out of 207 cases, or a little more than one-third.

If the results of the treatment with chloride of soda are compared with these, the difference is very great; for if those cases in which the patients died from causes independent of fever are deducted, the mortality is only one in six (seven and a half?); or, if only those three cases are deducted where death ensued after the termination of the fever, from accidental causes, and those included where in one case the chlorides had only been taken thirty-six hours before death, another who had tubercles, and two others with double pneumonia, there will still be thirteen (eleven?) deaths in fifty-seven cases, or one in about four and a half (five and a half?).

Some error has crept into M. Chomel's calculations, as his *résumé* differs considerably from the previous numerical details, so that he under-rates considerably the benefit of the treatment he proposes. By the minute details, the proportion of deaths is only one in seven and a half, (deducting the seven cases;) whereas, M. Chomel states it as only one in six. We have placed in the *résumé*, with a query, the figures calculated according to the previous details which are accurately copied from the original; the error is of considerable

importance, and requires rectification, one way or the other, by the author.

We have given M. Chomel's data, in order that all may judge as to his inferences. There is a source of fallacy in his calculations, the due importance of which should be estimated. A comparison is made between two sets of cases, differing in this essential particular, that a selection is made in the one and not in the other. If we take the whole number of cases treated with chloride of lime, which are fifty-seven, we find that forty-three are cured and fourteen died, which is one in three and a third; whilst the average of a much larger number of cases treated in the ordinary way is rather above one in three: the approximation then is singularly near. But M. Chomel deducts three cases, in which the deaths can be explained by cholera, perforation of the lung, and pneumonia, during convalescence, and adds them to the cures; by which he diminishes the mortality to one in five and a half. In order to compare this with the general table, we should be satisfied that a similar deduction would be made in that for such accidental deaths. The case of cholera might have been, under all circumstances, deducted; but is it probable that the other two, which were from diseases the sequelæ of fever, would not have been placed under the general head of deaths from fever? The four other cases, the deduction of which diminishes the mortality still more, were those where life was destroyed by inflammation of a vital organ or who lived a very short time after they were brought into the wards. Now, on examining those cases mentioned in the preceding calculations of fever under ordinary treatment, nearly all the deaths appear to have taken place under these two circumstances: twenty-one cases of fever were treated in the usual manner; thirteen recovered, and eight died; a mortality of nearly two thirds: but of these eight, three died of pneumonia, and four were brought in at a very advanced period.

M. Chomel has evidently selected the cases most fairly to test his new treatment, neither taking the very mild ones, nor the very neglected; but still a selection was made in the one case and not in the other, and this alone interferes with a comparison, as it would account for a difference in the results. From the careful mode in which M. Chomel has for a long period noted the cases of typhoid fever falling under his care, he would probably be enabled to furnish a table of the causes of deaths of a large number treated by the ordinary plan, with which a more legitimate comparison might be drawn. Although M. Chomel thinks that the facts are at present to a certain degree favorable to this mode of treatment, yet he repeats that they are not sufficient to establish clearly its efficacy. The striking contrast in 1831 and 1832, where it was not one in ten, or might be said to have been one in nineteen, and that in 1833-34 when it was raised to a third, should induce caution in deciding in favour of, or against, this remedy. More success



having attended this treatment than any other, he is induced to persevere. This subject appears to have been discussed at the last meeting of the British Association in Dublin, in the Medical section. Dr. Graves stated that, owing to Dr. Reid's suggestion, he was induced to try it in 1832 in fever; he does not appear to have given the remedy throughout the course of the disease, but merely during the stage of prostration. "When the early stage of fever is passed, when all general and local indications have been fulfilled, when there is no complication with local disease, when the patient lies sunk and prostrated, when restlessness, low delirium, and more or less derangement of sensibility is present, when the body is covered with maculæ, and when the secretions from the skin and mucous membranes give evidence of a depraved state of the fluids, it is then that the chloride of sodium may be prescribed with the greatest advantage. The mode in which it acts I will not pretend to explain; it is sufficient to say, that there is no remedy from which, in such cases, such unequivocal benefit is derived. It operates energetically, though not very rapidly, in controlling many of those symptoms which create most alarm. It seems to counteract the tendency to tympanitis, to correct the factor of the excretions, to prevent collapse, to promote a return to a healthy state of the functions of the skin, bowels, and kidneys; in fact, it seems admirably calculated to meet most of the bad effects of low putrid fever."

Dr. Stokes has also found that the use of this remedy was followed "by the most satisfactory results. It gradually but steadily removed all the bad symptoms, and in all cases the patients had most favorable convalescences." From fifteen to twenty drops were given in an ounce of water every four hours; the dose was never increased beyond this quantity; in all cases it had a fair trial, but was never continued longer than six or seven days. Wine, stimulants, and nutriment were given with it, according to the exigencies of the case. No statistical details of any sort are given, but it is stated by Dr. Graves that he has employed it in many hundred cases of fever.\*

A chapter on the nature of typhoid fever concludes the volume, and is an excellent specimen of M. Chomel's style. There is a clearness in the statement of the arguments, and an amplitude of illustration, which make us regret that we must confine ourselves to a mere outline, instead of translating the whole.

Having successively examined the anatomical changes, symptoms, causes, and treatment of typhoid fever, there remains the investigation of its nature; or, if that is not capable of a complete solution, the order and importance of the anatomical lesions must at least be determined, and the diseases with which it is at all analogous. These

\* Proceedings of the medical section of the British Association at Dublin, in August 1835. *Dublin Journal of Medical and Chemical Science*, September, 1835.

lesions have been divided into two groups: the constant, which includes diseases of the intestinal follicles and mesenteric glands, and the accidental, as inflamed conditions of various organs; only found occasionally, and not peculiar to fever. No one versed in pathology now considers this disease to be gastritis or gastro-enteritis; but the partisans of the same school who once affirmed this, change the name, and designate it follicular enteritis. In order to decide this point, several questions must be settled: 1. Is this follicular disease an inflammation? The redness, tumefaction, ulceration, suppuration, &c. of both follicles and glands indicate inflammation. 2. Is there any relation between the severity of the diseased changes and the symptoms? Experience proves that there is not, for that the most severe typhoid symptoms may exist with very slight disease of the follicles; whilst, on the other hand, very extensive ulcers may be present without producing serious symptoms. 3. Is the disease of the follicles constant? M. Chomel has never met with an exception; MM. Louis and Andral have seen some few cases in which all the symptoms of typhoid fever were present, without the peculiar lesion. 4. Are these anatomical changes primary or secondary? Thus, an inflammation is secondary when there is a morbid condition of which it is the consequence: it is primary when it alone constitutes the whole disease. If the changes in the follicles are examined, it is found that the disease is confined to these isolated patches of mucous membrane, and that the intervening portions are healthy. If we consider other cases of inflammations thus disseminated, we shall recognize differences between them and other inflammations. Thus, measles, smallpox, scarlet fever, nettle-rash, chicken-pox, boils, rheumatism, buboes of the plague, secondary syphilitic symptoms, abscesses after inflammations, &c., agree together in several points in which they differ from simple inflammations. (1.) There is a unity in each of these affections, however different in extent, situation, &c. in different cases. (2.) They cannot be artificially produced, like common inflammation. (3.) Antiphlogistics do not shorten their duration, and frequently do not diminish their activity. (4.) There is generally one termination peculiar to each. (5.) They apparently depend on specific causes. This is evident in many and highly probable in all. The causes are not similar to those which produce common inflammations. (6.) Are these inflammations primary or secondary? The bubo of syphilis and of the plague, the eruption of variola, scarlatina, &c., do not constitute the disease, but are only phenomena. This is expressed by *variola sine variolis*, *morbilli sine morbillis*, &c. of the nosologists. Numerous abscesses after inflammation, urticaria from indigestible food, and intermittents, are also secondary. It is generally admitted, finally, that rheumatism, boils, &c. are the expression merely of a morbid condition or diathesis. A special morbid condition, it may be said, must precede common inflammation, but this temporary modification of the economy is very

different from that organic condition under the influence of which rheumatic inflammations, for instance, take place for months together in various parts of the body, having everywhere the same characters, and therefore depending on one cause; representing but one disease, although multiplied, and capable of suspension.

If these disseminated phlegmasiæ have distinct characters, depend on specific causes, and are the expression only of a diseased condition of body, as is proved in some, and is probable in others; and if, consequently, they occupy only a secondary place in the diseases in which they are observed, it is just to conclude that inflammation of the follicles of the intestines, from the fact alone that it is disseminated, is also only a secondary phenomenon of fever, that it does not constitute the point of departure for all the symptoms. If it is recollected also, 1st, that there is no relation between the extent of the lesion and the severity of the symptoms; and, 2dly, that the lesion has been found absent in those who have had the symptoms, it is more evident still that typhoid fever does not consist essentially in inflammation of the follicles; but that this inflammation is one of the phenomena of the disease; that it is secondary, like the majority of the disseminated inflammations, that it may be compared in its pathogenic value, not to the pustules of the smallpox of which the number is in proportion to the danger, but rather to the bubo of the plague. After having diminished the importance of the follicular disease in typhoid fever, it is necessary to repeat that its value as a characteristic lesion is very great; that, if it is not constant in the rigorous acceptation of the term, it is very rarely absent, and that there is no instance of this lesion in a patient who did not present the symptoms of typhoid fever. What then is the primary lesion? When anatomy fails in detecting any appreciable change, or when the lesions discovered will not explain the symptoms, we are obliged to admit some hidden change in the nervous system or in the fluids. M. Chomel is inclined to the belief that the primary impression must be on the blood, as impressions on the nervous system generally show themselves without fever, and produce no change appreciable after death. Here the absence of diseased appearances is a rare exception, and fever is intense: it may therefore be concluded, that the impression was not on the nervous system. On the other hand, although no change peculiar to this disease can be detected in the fluids, yet its analogy with variola, rubeola, scarlatina, plague, &c., in which there is manifestly infection of the fluids, points to a similar cause. If contagion was proved, many symptoms would be explained, such as the development of the disease at a particular period of life; its attacking but once; the want of proportion between the lesions and the symptoms; the absence of the lesion; and the little influence of antiphlogistics. But this question is still undecided.

This chapter concludes the volume. The complete analysis which we have given of it will be a sufficient proof of our

estimation of the work. It is less elaborate than the standard production of the indefatigable and philosophic M. Louis on the same subject, whose plan M. Chomel has to a great extent adopted, but without sacrificing the independence of his own observations, which he has clothed in a more generally attractive form. The volumes of M. Louis will continue to be studied as a valuable book of reference, but the book which we have just closed will be more frequently read through.

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### ART. III.

*A Practical Treatise on Midwifery; containing the Result of 16,654 Births, occurring in the Dublin Lying-in Hospital, during a Period of Seven Years, commencing November, 1826. By ROBERT COLLINS, M.D., late Master of the Institution.—London, 1836. 8vo. pp. 526.*

A WORK like the present, the result of seven years' experience at the head of such an establishment as the Lying-in Hospital of Dublin, naturally excites much attention: it is looked upon as forming a sort of epoch in the annals of midwifery, and as enabling the author to lay before the professional world a complete system of practical obstetric science. Such a work is expected to be the great test of the recorded knowledge collected during the last half century, where, analysed by its author's immense experience, we are enabled to separate the really valuable matter from the dross, and thus condense the quantity of materials, which otherwise must unavoidably encumber and obscure our progress. It is to a careful and accurate record of the vast opportunities for observation enjoyed by those favoured individuals of our profession who are attached to similar institutions that we must look for the deciding of those facts, upon the establishment or refutation of which the improvement, and consequent success, of future practice must mainly depend.

It was with feelings of this kind that we opened Dr. Collins's review of his seven years' mastership at the Dublin Lying-in Hospital; and we may truly add, that they were accompanied by those of high respect and admiration, not only for his talented successor, but also for several other Dublin obstetricians, whose researches during the last few years have contributed so many valuable facts to our present stock of knowledge, and have gained for the Irish school of midwifery the high name and rank which it so deservedly bears at the present moment.

In a statistical point of view, Dr. Collins's work presents a mass of information unequalled by any preceding publication, and bears ample testimony to the care, industry, and patience of its author. In this respect alone it will always prove not only a valuable but also a *necessary* book of reference upon these subjects. We could wish

that the whole statistical records of this magnificent institution were collected and embodied into one work; for we are well aware that materials exist to a great extent from an early period, the arrangement and publication of which would add immensely to their value. It is true that this object, to a certain degree, will be answered by the statistical commission established by the present government, the object of which, among other things, is to collect the records of all the great institutions in the united kingdom. These documents, however, can only be in the hands of a few; whereas, if published separately in the form of a book, they would be attainable by all.

In reviewing Dr. Collins's work, we propose to separate, as far as possible, the statistical from the practical part, condensing his extensive and elaborate records into a short and general view, in order to present some of the most important facts to our readers, without overstepping the limits to which we must necessarily confine ourselves.

16,434 women were confined at the Dublin Lying-in Hospital, during the seven years of Dr. Collins's mastership. These gave birth to 16,654 children; of which, 1,121 were still-born; and of these, 293 were premature.

240 cases of *twins* occurred; and, of the 480 children thus born, 422 were born alive; of these, 245 were males.

*Triplets* occurred four times: in two cases it was the patient's second, and the two others her third pregnancy.

The mean of the patients' ages was 29½. All the children were born alive: one case was premature; eight are stated to have died.

The *face* presented in thirty-three cases; four children were still-born.

The *breech* presented in 242: of these, seventy-three children were still-born, forty-two putrid, and forty of the 242 premature.

The *feet* presented 137 times, (not including twins;) sixty-two were still-born, forty-one putrid, and thirty-six premature.

In forty cases the *shoulder or arm* presented; thirty-three children were turned; of which, twenty were born alive, six were putrid. In three of the thirty-three, the head required to be lessened.

Eleven cases of *placenta prævia* occurred; in eight of which, the child presented naturally, four were turned, one was expelled by the natural efforts, one was delivered by the forceps; in two the head was lessened; two presented with the feet, and one with the breech; six were born alive, two were putrid. Two of the women, in whom the children were turned, died.

*Hemorrhage after the expulsion of the placenta* took place in forty-three instances: viz. twenty cases of it during the first fifteen minutes, two in twenty minutes, one in thirty minutes, two in forty-five minutes, five during the first hour, two in one hour and a half, three in two hours, two in three hours, one in four hours, one

in six hours, and one in twelve hours. In one case it took place on the fourth day, one on the fifth, and one on the tenth day. Four of these patients died: one from rupture of the uterus, one from sloughing of the vagina, and two from hemorrhage.

*Retention of the placenta* occurred in sixty-six cases: in thirty-seven it was from want of uterine action, in nineteen from spasmodic or irregular action, in ten the placenta was adherent; four were twin cases; in twenty-four there was slight hemorrhage; and in four the delivery had been "forced." Six of the sixty-six women died: viz. four of puerperal fever, which was then prevalent; one of inflammation of the uterus; and one, a feeble woman, sunk on the eighth day after delivery. In each of these six, the placenta was retained by irregular action of the uterus.

*Convulsions* appeared in thirty patients, of whom twenty-nine were primiparæ; the other patient was in her second pregnancy, and had suffered from a similar attack before. Fourteen of the thirty-two children (two cases of twins,) were born alive. In eighteen women the convulsions subsided after delivery; in ten they occurred both before and after; and in two the attack did not appear till after delivery. Fifteen were delivered by the natural efforts, six by the forceps, eight by perforation; in one case the feet presented. Five women died.

*Rupture of the uterus or vagina* took place in thirty-four instances: in thirteen posteriorly, in twelve anteriorly, in two laterally; in one the os uteri was torn; and in six the precise situation of the injury was not mentioned. In nine cases of the thirty-four, the peritoneum was not torn; in one, there were numerous lacerations of the peritoneum, without the substance of the uterus being torn. Two women recovered. The following scale shows the proportion of cases occurring in first, second, &c. labours.

No. of Pregnancy,	1	2	3	4	5	6	8	9	10	11
No. of Women, ...	7	6	6	2	2	5	1	1	2	2

The funis prolapsed in ninety-seven cases, in twenty-four of which the child was born alive. Twelve of the ninety-seven occurred in twin cases; seven of the twelve with the second child; nine where the feet presented, two where the breech, four where the shoulder or arm, and seven where the hand presented with the head. Seven children were putrid, and three premature.

One hundred and sixty-four women died, (one in one hundred.) In giving a scale of the deaths occurring in first, &c. pregnancies, the great proportion of deaths met with in first cases will at once strike the reader. "We should carefully bear in mind," says Dr. Collins, "that, of the 16,414 women, 4,969 gave birth to first children, which is nearly a *third* of the entire; therefore, any relative proportions should be made with reference to this fact."

No. of Pregnancy,	1	2	3	4	5	6	7	8	9	10	11	13
No. of Women, ...	86	20	11	11	9	7	2	6	2	3	3	1

The following table shows the causes of death in the above cases :

Diarrhoea . . . . .	1	Sloughing of vagina . . . . .	6
Typhus fever . . . . .	5	Pericarditis . . . . .	1
Rupture of the uterus or vagina . . . . .	32	Peritoneal inflammation (placenta retained) . . . . .	4
Uterine hemorrhage . . . . .	11	Abscesses in spinal canal . . . . .	1
Puerperal fever . . . . .	59	Lumbar abscess . . . . .	1
Inflammation of the brain . . . . .	3	Phthisis . . . . .	2
Ulceration of the intestines . . . . .	3	Diffuse cellular inflammation . . . . .	1
Hectic fever . . . . .	1	Abscess in abdomen . . . . .	2
Grief, apparently . . . . .	2	Acute bronchitis . . . . .	1
Stricture of intestine . . . . .	1	Anomalous disease . . . . .	12
Effects of tedious and difficult labour . . . . .	11		
Convulsions . . . . .	2		

Eighty-eight women were attacked with *puerperal fever*. In thirty-two cases it appeared on the first day ; in twenty-nine, on the second ; in eight, on the third ; in two, on the fourth ; and, in one case, on the eighth day. The mortality is stated above.

Of the 16,654 children which were born, 1,121 were still-born, 527 were putrid ; 293 of the 1,121 were premature ; 460 of the 1,121 were first children. For further particulars of children dying in the hospital, we must give the author's statement in his own words :

"The total number of children born was 16,654: of these, 284 died previous to the mother leaving the hospital. This is nearly in the proportion of one in 58½, which must be considered a moderate mortality under any circumstances: however, when it is considered that this includes not only *all the deaths that occurred in children born prematurely, and in twins, but also every instance where the heart even acted, or where respiration ceased in a few seconds after birth*, the proportion of deaths becomes *trifling* indeed."

Thirty-two of the children who died were twins, and, of these, seventeen were premature.

So much for the statistical portion of Dr. Collins's work. To enter more into the details of such a subject would be impossible ; we must therefore refer the reader to the work itself. It is a lesson to all those connected with similar institutions, and shows the immense value of recording the particulars of every case under a proper arrangement.

Let us now examine the practical portion. Dr. Collins commences with some simple but very excellent "practical observations on Natural Labours:" he insists upon the importance of keeping the bowels open before labour, and on the utility of occasional enemata, &c. He cautions against examining too frequently in early stages of labour. With this we, of course, fully concur ; but cannot agree with him where he says that no

useful information can be thus obtained. Is it of no importance to ascertain the effect which the pains have on the os uteri, and thus decide whether the labour has really commenced?—whether she be a primipara, and, if so, whether the pelvis be well or ill shaped?—whether the head presents, and whether the funis or the hand is to be felt by the side of it?—whether the membranes remain unruptured, &c.? Is it of no interest, as well as consequence, to ascertain the precise position of the head, and carefully to watch its progress through the pelvis and external passages? To our surprise and sincere regret, we find the whole subject of natural labour passed over without one allusion to the subject of head-presentations, and without a single observation on the manner in which the head during labour enters and passes through the pelvis and external passages. We are at a loss to assign a reason for such an omission, especially in an institution where the recording of every case is attended to with so much accuracy and zeal, and where the memory of such a name as that of Fielding Ould ought to be cherished with the greatest respect. We look upon the carefully ascertaining the exact position of the head in every case where it presents, to be of the utmost importance: it not only leads to simple and correct views respecting the mechanism of parturition, but, from the degree of tact which it gives, we are enabled to detect any deviation from the natural course of labour, whenever it may occur. It is only in such institutions as this that we can have opportunities sufficient to come to great conclusions on these subjects; and we apprehend that there are few more deserving of attention than the mechanism of natural labour.

In speaking of the management of the perineum, Dr. Collins has not mentioned the danger to which it is exposed of rupturing when the shoulders pass, and which is decidedly one of the most frequent causes of severe perineal laceration.

He very properly (p. 6,) directs that the cord should be passed over the shoulders whenever it is twisted round the neck at all tightly; but, supposing it to be too tight even for this, and we have known it to be the case, what are we then to do?

In speaking of tedious and difficult labours, we are glad to find that the author deviates from the old and faulty custom of making the word *forceps* a plural substantive. He very correctly says the *forceps* was applied. He uses, with equal propriety, throughout his work, the word *pubes* instead of *pubis*. We could wish that he had not interspersed certain expressions which look strange to the eyes of his English brethren, such as *nurse-tender*, *force-delivered*, *stuping*, *hippo*, &c.: the two latter, to a person who has never been in Ireland, are perfectly unintelligible. The term “force-delivered,” we presume, is taken from the *accouchement forcé* of the French authors, where, in consequence of profuse hemorrhage, convulsions, &c., the os uteri was forcibly dilated, and the child thus turned and extracted; a mode of practice entirely



abandoned in modern times. Dr. Collins has not explained whether this expression refers also to *all* instrumental deliveries, or merely to cases of perforation.

In speaking of the forceps under the head of "Tedious and Difficult Labours," the author considers it (p. 11) not only an abuse of this instrument, but most hazardous to the patient, to apply it under any other circumstances than where "the os uteri is fully dilated, the soft parts relaxed, the head resting on the perineum or nearly so, and the pelvis of sufficient size to permit the attendant to reach the ear with the fingers." The first two conditions are necessary, the third is highly desirable, but we cannot agree with him as to the last condition. We are aware that in this respect we differ essentially from the general rule of English obstetricians, and consider the diagnosis of the position of the child's head by means of the ear in difficult labours requiring the forceps as liable to much objection. Whenever the head completely occupies the antero-posterior diameter of the pelvis, and presses firmly against the symphysis pubis, we hold it to be nearly if not quite impossible, at any rate highly improper, to attempt feeling for the ear; and yet many of these are cases where, although the soft parts are fully relaxed, the head is not *nearly* resting upon the perineum, although the great degree of cranial swelling might in some instances lead us to suppose it, and yet where the result has proved that the forceps *was* indicated, by the child being born alive, and the mother recovering without any injury.

Is the forceps merely an instrument of traction? Do we in no-wise facilitate the delivery of the head by compressing it, and thus aiding nature in moulding it to the shape of the passages? We apprehend that one of its most important actions is that of applying pressure. We have, it is true, repeatedly seen the finger introduced, under these circumstances, in search of the ear; but it has been rarely, if ever, done without great complaint and suffering on the part of the patient.

It is here that the study of the sutures and fontanelles is so valuable, that a correct knowledge of the precise manner in which the head advances through the pelvis is, at least in our opinion, so necessary; and we must again express our surprise and regret that this interesting subject, the very basis of practical midwifery, should have been so entirely passed over in silence. "We would earnestly recommend," says Dr. Dewees, in his admirable *System of Midwifery*, § 64, "the study of the fontanelles and sutures to the beginner of the practice of midwifery, by early accustoming himself to touch and distinguish them: it will lead him with certainty to the situation of the head as regards the pelvis, &c." And, in the following section, he says, "Many rely upon the position of the ear for the knowledge of the situation of the head, but we very loudly object to this test, &c." We unquestionably agree with

Dr. Collins that it would be quite improper to apply the forceps in cases where the pelvis measured "little more than three inches from pubes to sacrum, and in others less than this:" we are not referring to such cases, but to those where the degree of pelvic contraction is very slight, or where the difficulty depends on the full size and development of the foetal head: in such cases there is sufficient pressure to prevent the introduction, or rather *boring up* of the finger, (for we can call it nothing else,) behind the symphysis pubis, to search for the ear; and yet there is room enough in the oblique diameters to introduce the forceps, and, with patient and gentle traction and compression, at length to deliver the head without danger to the mother or child. The practice, against which he so justly exclaims, of dragging a child through a narrow pelvis, is still in vogue at Paris, where a forceps of great length and power is applied, and a degree of unfeeling violence used, which cannot be too strongly reprobated. The late Professor Oslander, of Göttingen, was, we believe, the only obstetrician of any name out of France who advocated a similar practice.

In speaking of Perforation, Dr. Collins passes a very high and just eulogium upon the value of the stethoscope in ascertaining whether the child be alive or dead, and, with the most honorable candour, confesses that formerly he must have occasionally committed error in delaying the delivery too long, from not being able to decide this important question. In the obstetric part of our last volume, we fully entered into the merits of this valuable instrument, and cordially join our author, in his note to page 21, in recommending the excellent work on this subject by the present master of the Dublin Hospital.

There is one observation (p. 17,) which struck us as requiring slight comment. In speaking of the difficulty of deciding as to the necessity of perforating, Dr. Collins says that, except where the misproportion between the child's head and pelvis is very great, "no individual can foretel whether the uterine action may be sufficient or not to expel the child; therefore, the most certain proof we have of such disproportion existing is the head remaining stationary for a number of hours after the dilatation of the mouth of the womb, uterine action during this time continuing strong." In the majority of cases of difficult labour arising from contracted pelvis, the os uteri does not dilate readily, but its edge remains thin and rigid for many hours; the pains do not appear to act in the proper direction, and this we presume, in some degree, results from the pressure to which the lower portions of the body of the uterus are subjected by being squeezed between the head and the pelvis. In many of these cases we should question the safety of waiting till the full dilatation of the os uteri. Where the patient is becoming exhausted,—where bleeding, laxatives, injections, opiates, &c. have been tried in the proper degree,—where the os uteri has dilated to about one and a half, or one and three quarter

inches in diameter, we should proceed to lessen the head, feeling confident that, as soon as the injurious pressure was removed, the dilatation of the os uteri would proceed. These are not cases for the forceps; the state of the os uteri forbids it. They occur most frequently in primiparæ; and our not finding the head, at the commencement of labour, so low as is usually the case in first labours, ought instantly to suggest an apprehension of misproportion between the head and pelvis. The child rarely continues alive until the full dilatation of the os uteri, and, by thus delaying, we are running a great risk of those dangerous sloughings and severe injuries of the soft parts, against which the author so properly warns us.

Dr. Collins has not favored us with a description of the forceps used by himself and colleagues in the Dublin Lying-in Hospital; which would have been desirable.

The next chapter (and it is to be regretted that the chapters are not numbered,) consists of observations on "Presentations of the Face, and with the Face to the Pubes." It is little more than a statistical account: no notice is taken as to *how* the face presented, or of the manner in which it passes through the pelvis and external passages; which appears to us an important omission.

Twelve cases are said to have occurred where the face was turned to the pubes. Of these, six were still-born; four being delivered by the crotchet, and one being acephalous. It is to be lamented that the other cases of this presentation were not more accurately observed.

In the chapter on Breech-Presentations, the author tells us that "the breech of the child may be distinguished from any other part by its softness, the depression between the nates, the organs of generation, the anus, and the discharge of the meconium. Although this latter is sometimes observed when the head presents, in consequence of severe pressure, yet, under these circumstances, it comes away in a more fluid state, and has not its natural appearance, being mixed with the discharges from the uterus and vagina." But the breech is not to be distinguished by these signs, whether taken separately or conjointly: it is to be distinguished by the coccyx, with the sacrum above it, the anus below, and neither by the softness of its feel or the parts of generation. By such rules, how should we be able, when the presenting part is swollen by the pressure of the surrounding parts, to distinguish between the nates and the face. It would be nearly, if not quite, impossible. We have, however, discussed this subject in our former volume, (p. 114.)

In the following page (41,) Dr. Collins very correctly observes, that in breech presentations, where there has been no interference in the previous part of labour, it is rarely necessary to turn the child with its occiput towards the pubes, "the breech naturally making the turn above alluded to in its passage." This is a

valuable observation, and we could wish that the fact were more generally known, as it would prevent much of that officious interference with nature which frequently renders breech cases so dangerous to the child's life.

It is not desirable to introduce the forefinger of the left hand into the mouth, as recommended by the author: it is much better to place two fingers on the upper jaw, where pressure may be safely applied.

Dr. Collins reckons breech cases among preternatural presentations, (p. 44;) but why should this be so? the child presents with the long axis of its body parallel to the axis of the superior aperture of the pelvis. What is there preternatural in a breech case? Among the breech cases which have been recorded, one child is stated to have weighed above thirteen pounds. These extraordinarily large children are by no means common, and are mostly still-born; in the present instance, however, the child was alive. Within the last few weeks, a case has been mentioned to us of a child which was born alive, at the City-Road Lying-in Hospital of London, weighing fourteen pounds; but the late Sir Richard Crofts is stated to have delivered a living child weighing fifteen pounds, which is quite enormous.

In cases of arm or shoulder presentation, (p. 66,) where the os uteri is not fully dilated, and is so rigid as to make it impossible to introduce the hand for the purpose of turning, we fear that the practice recommended is not so decided and effective as it ought to be. Dr. Collins says, "in such a situation, where the individual is strong and plethoric, twelve or fourteen ounces of blood should be taken from the arm, and a tablespoonful of the following mixture (an antimonial solution of one grain to one and a half ounce of water with acetum opii,) given every half hour." In such cases we never think of the quantity to be drawn, but of the effect to be produced: in a few weakly London-born females, the loss of fourteen ounces of blood has produced sufficient faintness to effect our object; but, in the majority of cases, especially among the poorer classes of Irish, any thing less than double that quantity has seldom sufficed. Dr. Dewees's observations on this subject are so admirably to the point, that we cannot do better than express our own views in his simple and impressive language. "Bloodletting," says this accomplished obstetrician, (§ 629,) "is the only remedy with which we are acquainted that has any decided control over the contracted uterus. It is one almost certain of rendering turning practicable under such circumstances, if carried to the extent it ought to be. A small bleeding in such cases is of no possible advantage; for, unless the practitioner means to carry the bleeding to its proper limit, which is the disposition to or actual state of syncope, he had better not employ it."

The directions for turning are scanty, although as far as they go, good: we must not, however, forget the quantity of matter which

Dr. Collins has had to condense into one volume, and make allowances accordingly. The diagnosis between the knee and elbow ought to have been mentioned, for it is very important in these cases.

The author (p. 71.) quotes the authority of Dr. Clarke, of Dublin, in showing the futility of attempting to turn putrid children which present wrong. His own directions for conducting embryulcia under these circumstances are very judicious, and too valuable to be passed by without quoting.

"Dr. Clarke, in his Report of the Dublin Lying-in Hospital, states that 'he had heard of several patients who lost their lives by practitioners of good repute insisting on turning the foetus, though evidently putrid.' 'Would not,' he adds, 'a better chance be afforded to patients so situated, by perforating the thorax or abdomen, so as to lessen their bulk, and, by the aid of the crotchet or blunt hook, bringing down the breech?' This, from ample experience, is the practice we would unhesitatingly recommend; and that in all cases where its death could be satisfactorily ascertained. We have performed this operation repeatedly without the slightest injury to the patient, except in one instance, where the pelvis measured but two and a half inches from pubes to sacrum; nor do we think, where common caution is used, that there is, comparatively speaking, any risk to the patient. Delivery in this way is very troublesome, in most instances requiring an hour and a half or two hours for its completion. A free opening must be made with the ordinary perforator into the thorax, so as to permit us completely to empty it of its contents. We next open through the diaphragm, and remove the abdominal viscera, in order, as much as in our power, to diminish the bulk of the body. For this purpose the crotchet and fingers are to be used. We then fasten the crotchet on the pelvis of the child, and, giving gentle assistance with each pain, where the woman is well-formed, the breech, by a little perseverance, will be got down, and the delivery accomplished. Where we find much resistance, and there is no very urgent symptom rendering speedy delivery necessary, by withholding further assistance for some hours, the body becomes softened and collapsed, and is then more easily removed. In some instances the child is expelled doubled by the action of the womb."

We are surprised to find that, in an institution like this, where a head physician, assistant physicians, and also pupils, are constantly residing, it should not be a rule for every patient to be examined upon her admission by one of them, and the result of the examination properly entered in a book for that purpose, whether it be a common or uncommon case: were it only to ascertain the precise nature of the presentation, the value of such a record would be sufficient reason. In three of the cases of shoulder or arm presentation, several hours were allowed to elapse from the patient's admission before the real state of the case was ascertained. No. 6 (p. 75.) was sent to the hospital at the request of a midwife, who had been attending her, and who, although she assigned no distinct reason, would probably not have taken this step had she not found

something wrong. The patient was admitted in the evening; during the whole night she was free from pain, and therefore the labour remained in *statu quo*, and yet the presentation was not ascertained until the following morning, and then by the head midwife, not by one of the medical men. No. 9 (p. 77,) was admitted at seven p.m. with slight pains, the waters having been already discharged; and yet the presentation is not ascertained till eleven. No. 15 (p. 80,) was admitted in a very dangerous state from exhaustion by previous hemorrhage; the membranes were ruptured when she came in at six a.m.; the shoulder was not ascertained to present until three hours after, viz. until the os uteri was nearly fully dilated. The very difficulty of reaching the presenting part ought, we think, to have warned the attendant that all was not right. These omissions could not have happened if due attention had been paid to the nature of presentations and the manner in which the child, during labour, enters and moves through the pelvis and external passages. Again, at p. 103, No. 33 is a case of placenta prævia, where ten days previously there had been a considerable discharge of blood, which had returned shortly before her admission, and yet "no examination was made for seven hours after."

At page 86, No. 37, a case of elbow presentation is given, where turning became impossible from the rigid contraction of the os uteri on the child's body. We cannot help thinking that full bleeding, with a dose of opium afterwards, would have rendered this operation practicable.

On the subject of placenta attached to the os uteri, a number of valuable observations are interspersed with others which are rather commonplace and unnecessary in a work like this; several important points are left quite unnoticed, and upon others we feel it necessary to differ from the author. In estimating the degree of danger from the blood discharged, Dr. Collins (p. 91,) says "there might be internal uterine hemorrhage to an alarming extent." This, in cases of placenta prævia, we can by no means understand. The uterus is filled with liquor amnii, or at least by the child, for the membranes are seldom ruptured until the hand is passed; the blood comes from the os uteri itself, and therefore flows much more readily into the vagina; nor do we exactly see how it is possible for the blood, under these circumstances, to collect in the uterus. In none of the cases to which we have been called, and they are not a few, have we ever seen the slightest trace of internal hemorrhage, nor are we aware of such a case on record. From another observation, a few lines further on, we must also differ. Hemorrhage from placenta prævia does *not* generally come on *slowly*; it usually appears suddenly, although the quantity lost will chiefly depend on the period of pregnancy. In the four last cases which we have attended under these circumstances, the hemorrhage has come on suddenly and profusely. In one case the patient was

awoke in the night by a profuse discharge, which soaked through every thing; in two others it burst out with a sudden gush as the patient was standing, without the slightest previous warning; in these two the placenta was centrally attached to the os uteri, and the patient was gone her full time, the hemorrhage was also very profuse.

"Blood lost near the full period of pregnancy," says Dr. Collins, in a note to p. 92, "produces much more debility than in the earlier months. It is very rare to meet with hemorrhage proving fatal before the sixth month of gestation, when properly treated, though often profuse." To the correctness of this observation we fully agree; but why is there no explanation of the fact given, or of these very early cases of hemorrhage from placenta prævia not being dangerous, even although the uterus will not admit the hand. The invaluable observations on this subject in Rigby's *Essay on Uterine Hemorrhage* ought to have been mentioned, if not quoted. The author remarks, in the same page, "It is also of advantage to observe if the discharge of blood be increased with each labour pain, which is almost invariably the case where the placenta presents; whereas, if it be not so situated, the hemorrhage will at such times be diminished." This is an excellent observation; it is of itself a means of diagnosis, and distinguishes this form of hemorrhage from every other.

We can by no means agree with the author that there are cases of hemorrhage from placental presentation, where the medical man "is obliged either to suffer his patient to sink from loss of blood, or proceed to deliver when the parts are in an undilated and rigid state, in order to afford her the only chance of life." We cannot but express our surprise that the plug should have thus been passed over in silence; a remedy which, in these extreme cases, must be the only means on which our hope of preserving the patient can rest. Besides the observations of Leroux on this subject, does the author forget those of Dr. Burns, Dr. Dewees, or, still more recently, those of Mr. Ingleby in his work on *Uterine Hemorrhage*? The inestimable value of the plug has been strikingly shown by the latter author, who quotes two remarkable cases where life was preserved solely by this means; one described by Mr. Cusack, in the *Dublin Hospital Reports*, vol. v. p. 515; the other from the practice of Mr. Grainger, of Birmingham.

The injurious results of not applying the plug are but too strikingly exemplified in No. 34, p. 97, and No. 89, p. 99. The os uteri not being sufficiently dilated, both patients were allowed to sink into a most alarming and desperate state of exhaustion from continued flooding. In one the neck of the uterus was lacerated from endeavouring to pass the hand through its mouth; whereas, if the plug had been used at an earlier period, the patient would

have been placed in comparative safety until proper uterine action had come on, and by that time have regained sufficient strength by proper treatment to have enabled her to pass through her delivery with safety. No. 50, p. 101, shows a similar defect.

At page 94, Dr. Collins has noticed a valuable and remarkable fact, which appears to have been scarcely, if at all, noticed by English obstetric writers. "Even a slight injury," says he, "to the mouth of the womb will prove more fatal than an increased loss of blood so long as the strength can possibly bear it." Some explanation of this important fact ought surely to have been given. In what, then, does the danger of slight injury to the os uteri under these circumstances consist; because, in the most favorable labours, nothing is more common than slight laceration of its edge? In placenta prævia, however, it is very different: the os uteri now plays the part of the fundus, and its vessels in such cases undergo nearly, if not quite, the same degree of dilatation and development as those of the fundus are observed to do when the placenta is situated there. A slight laceration of the os uteri now is of very serious consequence: large vessels are torn, which the firmest contractions of the uterus cannot close: hence a constant, though slight, discharge of blood goes on, which gradually exhausts the patient.

"As to whether the hand should be passed through the placenta or at its edge, we must," says Dr. Collins, "be guided by circumstances." We look upon it now as a settled point never to attempt piercing the placenta with our hand. Dr. Rigby has, it is true, advocated this practice, but in so qualified a manner that we should almost doubt if he ever used it at all; for he expressly states that he found it impracticable, "and it ever must be when the middle of the placenta presents to the hand, from the thickness of it near the funis: it must be carefully separated from the uterus on one side, and the hand passed till it gets to the membranes.\*" Dr. Collins has overlooked the admirable observations of Dr. Dewees (§ 1, 163,) on this subject: they are, indeed, well worthy of perusal, but our limits forbid us to quote them.

"It occasionally happens," (same page,) "that a large quantity of blood collects in the uterus previous to delivery, which, if not removed, keeps this organ distended, and thus creates a tendency to hemorrhage." The meaning of this sentence is obscure. Does the author mean to say that internal uterine hemorrhage can take place in cases of placenta prævia before delivery? The sentence surely belongs to hemorrhage after labour, a totally different subject; and the words "previous to delivery" must have been misprinted for "after delivery:" in no other way is it intelligible to us.

In a case of partial placenta presentation with much hemor-

\* Essay on Uterine Hemorrhage, p. 64, 5th Edit.



rhage before and after delivery, (p. 98, No. 77,) would it not have been better practice to rupture the membranes? Uterine action would have increased; the head pressing on the presenting portion of placenta would have stopped the hemorrhage; turning would have been rendered unnecessary; and, labour having followed a more gradual and natural course, the chances of any hemorrhage after delivery would have been much diminished. We have used this plan in at least four cases of partial presentation of the placenta (the os uteri being soft and dilatable,) with complete success. Where uterine action still appeared sluggish, a dose of ergot sufficed to rouse it.

The author's "Observations on Accidental Hemorrhage" are truly practical: they are plain and simple, and worthy of careful perusal. Cordially do we agree with him that Dr. Burns's directions as to dilating the os uteri are "calculated to lead the young practitioner into error;" nor even are they "only justifiable in the most extreme cases of danger," and certainly "never," as he well observes, "until rupturing the membranes has been found to fail in stopping the hemorrhage;" for, if the plug be properly used, the hemorrhage will be controlled, and the os uteri will have sufficient time to dilate, either to let the head pass or to admit the hand. We again regret that Dr. Collins has so completely discarded this valuable aid.

The author has repeatedly observed that the ergot of rye diminishes the action of the heart; thus, for example, at page 134, he says "the mother's pulse, when she got the first dose of the ergot, was 108; at the time the second was given, 102; and, in a quarter of an hour after, it had fallen to 98. This sedative effect I have almost invariably observed the ergot produce, even where it did not seem to act in any other way upon the patient." This is an interesting fact, and deserves attention. We must confess that we have not noticed it.

In his observations on hemorrhage between the birth of the child and expulsion of the placenta, there are no remarks on the effects of portions of placenta being left in the uterus on account of their firm attachment, although, at p. 130, No. 100, a case of this sort occurs. Again, at p. 180, he says, "where the afterbirth is retained by morbid adhesion, it is recommended by most writers to remove as much as can be effected by gentle means, leaving the remainder to be thrown off in the discharges." But is it thrown off in the discharges?—has the author ever observed this fact?—we have not; although on several occasions we have known of cases where considerable portions of placenta were left adherent, and never appeared in the discharges. In the following page he informs us that "in eight cases, hemorrhage occurred in combination with hour glass or irregular contraction of the uterus." No remarks are given on the nature of this irregular distribution of uterine activity. Our

own view, viz. that the stricture is produced by the os uteri internum, and not by the body of the uterus, we stated in a former number: it is that which is generally adopted by the first continental authorities.

On the treatment of Hemorrhage after Expulsion of the Placenta, we regret to say that the rules are both scanty and incomplete. Gentle friction on the abdomen, which, in all moderate cases of hemorrhage, we find sufficient to excite uterine contraction, is not even mentioned; but, wherever the uterus is "much relaxed and distended," and the binder and pressure prove insufficient, (which will be almost always the case where there is much uterine inactivity,) the hand is to be introduced. With such practice we cannot coincide. The introduction of the hand is only warranted where the uterus is considerably distended, and, in its present atonic state, unable to expel the coagula: in most of these cases, introducing one or two fingers to the os uteri, and pressing with the other hand on the fundus, is quite sufficient to remove any coagula on the uterus; and we are alluding to cases in our own practice of the most alarming and dangerous description. Instead of applying the binder whilst the uterus shows a tendency to relax, which prevents our feeling the state of the fundus, the great index of our patient's safety, and which, by increasing the warmth of the abdomen, tends still further to relax the uterus, other remedies are to be used. Cold applications are among the most valuable, and yet how insufficient and meager are the observations on this head. "The free admission of air, with the extensive use of cloths soaked in iced or the coldest pump water, will be found useful," is the sum of the author's observations on the external application of cold. It is true he mentions that, in some very obstinate cases, he has poured cold water from a height upon the abdomen with success, as if the fact were new. He draws no practical inferences from it; and, from talking of introducing snow and ice into the vagina, is evidently ignorant of the inestimable principle laid down by Dr. Gooch, that "*cold applied with a shock is a more powerful means of producing contraction of the uterus than a greater degree of cold without the shock.*"

With the use of injections of cold water, &c. in the vagina, he professes to have no experience, but "should rather think it not advantageous." Yet we consider this as actually one of the most powerful and valuable means we possess of inducing uterine contraction in dangerous cases. An equally valuable remedy here, viz. the ergot, is not mentioned; nor the application of the child to the breast.

We must confess ourselves greatly disappointed with the author on this subject. His after-treatment is judicious and simple, except on one point. "Severe and acute pain of the temples very frequently succeeds profuse hemorrhage, in a shorter or longer time after delivery: in relieving which, we have almost constantly

found the application of eight or ten leeches to the affected part successful." This pain of head, which is occasionally one of the most oppressive and severe forms of headach known, results from debility and want of due circulation in the brain: how can this be permanently or safely relieved by leeches? A dose of camphor and extract of henbane, repeated according to circumstances, has rarely if ever failed to remove it; and it is a far safer form of sedative than mere opium. The subject is of such intense interest that we could have wished to enter much more fully upon it, but our limits forbid.

In a case of hemorrhage after birth of the child, (p. 158, No. 125,) the patient was fifty-nine hours in labour, the head pressing firmly against the ischia for some time, with evidences of serious pelvic deformity; yet no assistance was rendered until the foetal heart ceased to be heard; no bleeding was practised, although the pulse was between 120 to 130, and the external parts were œdematous. No attempt was made to apply the forceps; nor was the head perforated, until it had remained stationary, pressing against the ischia for nearly twenty-four hours. The consequences, we need hardly add, were dreadful sloughing and gangrene of the vagina, communication between it and the rectum, and death on the ninth day.

The author's observations on not hurrying labour, as being a powerful means of preventing retention of the placenta, are good. In speaking of the cases where the placenta was retained, he says "in four the delivery had been forced." We strongly object to this expression: we do not *force* delivery in the present day.

We agree with Dr. Collins in saying "Puerperal convulsions occur almost invariably in strong plethoric young women with their first children, more especially in such as are of a coarse make, with short thick necks;" but we complain that no discrimination is made between the different forms under which these convulsions appear. Dr. Dewees's excellent observations on this subject have not excited the author's attention, or he would not have denied "that puerperal convulsions were caused by the irritation produced in the dilatation of the mouth of the womb;" he would have been aware that convulsions arising from this cause are preceded and accompanied by symptoms of strong determination to the head; that there are other convulsions, arising from a totally opposite state of the circulation; that there are others where the cerebral circulation is in an apoplectic state; and lastly, others which partake strongly of the hysteric character. He would not have waited three hours after perforating before attempting to extract the child, knowing that *its* presence in the uterus and passages was the exciting cause of the convulsions: he would have effected the extraction with ease, as the pelvis was well formed. The forceps slipped with the second child, which had thus to be perforated also. The mother was given a bolus of calo-

mel and jalap and one grain of opium, the bowels being "most obstinately torpid." She died in thirty-four hours.

The next case of convulsions shows equally objectionable practice, (p. 203, No. 8.) The first fit came on whilst the head "was pressing on the perineum and the pains strong." It was allowed to remain in this state for *eight* hours, without any assistance being given, when, all the symptoms of rupture of the uterus coming on, the child was delivered by perforation. The patient died, and the dissection showed extensive rupture of the uterus and vagina.

The next case is even worse, and shows the impropriety of allowing the patient to be in labour without making a proper and early examination. The patient was allowed to be *twenty-four hours* in labour, during which convulsions, and ultimately fatal rupture of the vagina, took place, before the real state of the head (hydrocephalus of great size,) was ascertained.

At pages 207 and 208 are the records of two fatal cases of convulsions, viz. Nos. 21 and 25, where, in our opinion, assistance was also delayed too long.

The use of tartar emetic, which the author recommends, p. 212, is very serviceable in *some* cases of convulsions, especially when connected with a neglected state of the bowels, but not in every case. His note to the next page, respecting the use of camphor, and also to page 227, on the exhibition of opium, seem to show a want of discrimination of the cases where these remedies were indicated and where they were not.

At page 223, No. 20, is a case of convulsions, where the attack came on when the os uteri was "fully dilated, the pains vigorous, and the head advancing:" no assistance was given, and the patient was not delivered till five hours after of a dead child, the heart of which had been distinctly heard an hour before. The author states that "the case was not such as to admit of the application of the forceps." The reasons for the non-indication of the forceps should have been given: she had been freely bled, the bowels "well acted on," and passages well dilated; what was there to prevent the forceps being applied? No. 11, in the next page, was allowed to be eight hours in labour after the appearance of the convulsions without assistance, although "the os uteri and soft parts were well dilated, the pains strong, and the head making considerable progress."

In speaking of the cautions in order to avoid a recurrence of the attack in a subsequent pregnancy, Dr. Collins very justly remarks that "a severe paroxysm of genuine puerperal convulsions is seldom met with in any individual who has *before* laboured under such a seizure." This is an excellent remark, and he applies it in the next page (238,) with equal justice to puerperal mania. Dr. Gooch's excellent observations upon this subject confirm the fact.

On Rupture of the Uterus, Dr. Collins correctly observes, that "the part which usually gives way is at the junction of the cervix

uteri with the vagina :” he also adds, “either anteriorly or posteriorly, and, according to my experience, equally in both situations.” The opinion hitherto was, that it occurred most frequently at the *back* part ; but we freely confess ourselves inexperienced upon this subject.

We are surprised to find thirty-four cases of rupture ; (about one in every 480 labours,) a proportion truly awful, and we confidently assert neither equalled nor approached in the practice of any similar institution. We should have been at a loss to account for this extraordinary number, had not the melancholy details of these deplorable cases given us but too sufficient an explanation ; and, whilst we admire the author’s candour in thus freely stating them, we must nevertheless reprobate in the strongest and most unequivocal manner the practice under which many occurred. We would gladly have avoided entering into the details of these sad cases ; but we cannot pass on without showing the grounds upon which we have made these observations. We can only do this by calling the reader’s attention to the chief points of those cases, the management of which we object to.

P. 259, No. 19, her first labour, “the head remained for some time high up ;” it gradually descended, and in nineteen hours, when symptoms of rupture appeared, it was low in the pelvis ; “the pressure on the urethra was so considerable, that there was some difficulty experienced in passing the smallest sized flexible catheter. The head was lessened, but not delivered without the greatest exertion ;” and even afterwards some force was necessary for the extraction of the shoulders. Ought not the fact of the head remaining so long high up in the pelvis of a primipara to have been sufficient warning that there was want of room ? If an early examination had been made with due care and attention, it is almost impossible that the unusual manner in which the head was pressing upon the brim could have escaped attention. After all, the patient scarcely seems to have died from the effects of the laceration, which was all but healed, but rather exhausted by the extensive sloughing and ulceration in the soft parts produced by this delay in giving assistance.

Should a patient who (P. 291, No. 16,) had been “force delivered,” as Dr. C. calls it, before in the hospital, to go four hours after the full dilatation of the soft parts, with the head low down, the outlet of the pelvis evidently narrow, without giving assistance ? Rupture ensued.

The next case (No. 18,) shows equally objectionable practice : the woman was in labour from the preceding day ; “the head was high in the pelvis, and made but little progress ; the soft parts were well dilated, pulse between 120 and 130 ; tongue foul. She continued in this state for some hours :” symptoms of rupture set in ; the head, being out of reach of the forceps, was lessened. Can we justify allowing a patient to remain in labour with the head in this

situation, with such a pulse and tongue, "for some hours?" Mis-  
chief *must* inevitably ensue. The dissection showed that the injury  
had resulted from the vagina being squeezed between the head and  
a projecting portion of sacrum. We can scarcely agree with the  
author in thinking that the injury had taken place before admission.

P. 299, No. 28. "A feeble delicate woman was thirty-six hours  
in labour previous to the setting-in of the above symptoms (of rup-  
ture,) and had been force delivered in this hospital eleven months  
ago." With such a confession, what can justify a delay of thirty-  
six hours?

P. 300, No. 32, was admitted in the evening with most danger-  
ous symptoms of exhaustion, having been sent "many miles from  
the country in severe labour;" and yet (would the reader credit it?)  
she was not delivered until the next morning at nine o'clock, *as the  
child's heart had ceased to beat*, and the patient was in *articulo  
mortis*. Is *this* what we are to understand by the tenderness of not  
choosing to perforate the head of a living child,—waiting until it  
had been gradually destroyed by the length and severity of the  
labour, and the mother brought into a dying state? If, by means  
of the stethoscope, the having ascertained at one period of her  
labour that the child was alive, led to such deplorable practice, we  
can but regret the author having ever used it.

P. 301, No. 3, shows in the strongest manner the great impro-  
priety of not having a properly qualified person to examine every  
patient on admission. The patient was admitted at nine *p. m.*, in  
labour of her first child. An elbow presented, which was actually  
mistaken for a knee, and she remained without any further notice  
for six hours. The real nature of the presentation was now ascer-  
tained: the body had become closely wedged in the pelvis; there  
was *extreme* pelvic deformity, (an antero-posterior diameter of only  
two and a half inches.) Turning was now impossible. The thorax  
was perforated. "It required most laborious exertion for two hours  
and a half to complete the delivery, which was only accomplished  
by taking the child in pieces." She died in four hours. Exten-  
sive laceration of the cervix uteri and vagina was found on the right  
side. How much suffering and difficulty might have been avoided  
if the real nature of the case had been properly ascertained before  
the presenting part had become so firmly impacted in the pelvis.  
If any parts of the child liable to present can be distinguished from  
each other, certainly it is the knee from the elbow: the difference  
cannot be mistaken. But, even putting aside this oversight, how  
was it possible to avoid noticing such unusual pelvic deformity? If  
this "person in attendance" was a pupil, he must indeed have been  
a beginner, and, as such, ought not to have been intrusted so  
entirely with a case. If it was a midwife, most assuredly she  
ought to have been dismissed as unfit for such an office. Further  
comments on these cases we must decline making.

"The operation of turning," says our author, p. 242, "is not

unfrequently a cause of laceration of the vagina or mouth of the uterus," &c. That it may prove a cause, he has shown in at least three cases; but that laceration is "not unfrequently" thus produced, we cannot admit,—at least on this side the water.

It is with pleasure we turn from this subject, (upon which we have unavoidably dwelt much longer than we could have wished,) to Dr. Collins's excellent "practical observations on Twin Births:" they are plain and judicious. The placenta of twins are (as he rightly observes,) generally united, and not separated, as has usually been asserted; the two circulations, we believe, however, are always distinct. The following observation is very valuable:

"When we reflect," says Dr. C., p. 313, "as has been computed, that the ordinary proportion of deaths in women giving birth to twins is one in twenty, whereas, with single children, a death does not occur in nearly five times that number, we cannot but see the necessity for the most scrupulous attention on our part. It is no matter what the nature of the attack may be, whether hemorrhage, convulsions, fever, &c., it will be found much more dangerous in women giving birth to a plurality of children than others."

After inculcating such really valuable rules, we cannot but be surprised to see his practice at p. 318, No. 174. After the patient (first pregnancy,) had been forty hours with the first, why could not the second child be delivered with the forceps? Why allow the head, which was low in the pelvis, to remain there eight hours? We cannot understand why "the case did not admit the application of the forceps:" the head had "descended into the pelvis," and, of course, the parts were well dilated by the passage of the first child.

In his observations upon Prolapsus of the Cord, the author has given us no remark whatever on the circumstances under which this displacement occurs; which is to be regretted, because, in a work like the present, (a record of great experience,) such observations are always valuable.

He almost entirely discards turning the child, or the application of the forceps. We must confess we have not found turning so dangerous to the mother as he considers it to be, and should scarcely think ourselves justified in not undertaking this operation where the cord was felt pulsating strongly, and the os uteri and passages were in a favorable state. Trying to keep up the cord with the fingers, or with a piece of sponge, ought not even to have been attempted at all; its utter uselessness has long since been proved. The author proposes to attach the cord to the end of a flexible male catheter, and thus pass it up above the head, leaving the catheter there during the labour; but has given no results of his trials. An interesting paper on this very subject was published last year by Dr. Michaelis, of Keil, in the third volume of the "*Neue Zeitschrift für Geburtskunde*," where he succeeded in replacing the cord above the presenting part in a considerable number of cases with perfect success. His plan is as follows: he passes a piece of twine doubled

through a flexible male catheter, so that the two ends hang out at the lower extremity, and the loop at the upper or vesical extremity; having introduced the stilet, and passed the loop round the cord, he withdraws the stilet just so much that, by bending back the point of the catheter, the end of it may project through the orifice. Upon this he hooks the loop, and pushing up the stilet to its full extent, and drawing down the ends of the ligature at the lower extremity, the funis is thus firmly attached to the upper end of the catheter. Having now carried it as high as possible above the brim, he withdraws the stilet; the funis is instantly disengaged from the catheter, which is therefore removed, leaving the funis behind.

The author (p. 350,) quotes the following passage from Dr. Denman: "When the child is dead, all the efforts of art must be useless to it, and may be injurious to the mother: we must therefore be satisfied with permitting the labour to proceed as if the funis had not descended;" an opinion, as he confesses, supported by Burns and other authorities, but from which he differs, not seeing any advantage in allowing the patient to remain hours in labour, when delivery may be quickly accomplished by lessening the head. The author mistakes Dr. Denman's meaning. By "permitting the labour to proceed as if the funis had not descended," Dr. D. merely meant that he should treat it as a common natural labour; but assuredly he would never have allowed it to go on thirty-six, forty-eight, or even more hours, as reported in several of the author's cases. The quotation, both at its beginning and end, shows (to our mind) better practice than what the author has advocated: it shows that, where the child was alive, Dr. Denman would probably have interfered with art; and that, where it was dead, and the interference of art not indicated on the part of the mother, he would have left it to nature. This, in fact, was his practice; and it was judicious. The author's tabular view of these cases is incomplete, from not having the presentation of the child noted, which would have greatly added to its interest and value.

On the subject of Sloughing of the Urethra, &c., Dr. Collins considers that the symptoms threatening this mischief do not indicate lessening the head so long as the child is alive. We should feel inclined to modify this rule considerably. Where the head has been some time pressing against the symphysis pubis without entering the pelvic cavity, and there is no chance of being able to deliver with the forceps, we should consider the perforator indicated, without waiting until the child had died from the effects of the labour; for by this time we should run a considerable risk of losing the mother also. We hold that, where there are not evident indications for the perforator, it can rarely happen that the head is so long pressing on the soft parts as to produce sloughing, and yet the child be alive, without the forceps having been indicated.

We fully agree with the author's observations respecting the Varieties of Puerperal Fever. "The extreme difference of opinion,"



says he, p. 390, "and the very opposite measures recommended by practitioners, arises chiefly, I am satisfied, from their treating of every variety of puerperal fever as one and the same disease; whereas, there is perhaps not any other which exhibits a greater diversity of character in different situations, and even in the same situation at different periods." If this fact had been properly attended to, we should not have seen so discrepant and opposite opinions in the various works on this subject. The form of the disease which he has described appears in most cases to be very similar, if not identical, with the common form observed in London, beginning with pain in the region of the uterus, which is felt large and hard, and tender upon pressure, sometimes extending to one side; the pain, in the course of a few hours, extends over the whole abdomen, which becomes tympanitic; the pulse is rarely hard, although quick and perhaps sharp; the tongue is mostly covered with a thin white fur, which, if the symptoms grow more unfavorable, becomes dry and brown.

"The result of my observations upon the treatment of puerperal fever," says Dr. Collins, p. 396, "is, that *general* bleeding, except where there is a strong, full pulse, and the symptoms are of a high, inflammatory character, is injurious. On the contrary, *local* depletion, by the application of three or four dozen leeches, followed by the warm bath and stuping, all of which should be repeated according to circumstances, as often as the strength will permit, seemed most beneficial. These means, together with the active employment of calomel conjoined with hippo and opium, aided by mercurial frictions, offer the best prospect of relief. Blistering the entire abdomen, after leeching had been pushed as far as could be, was found serviceable. In some instances the debility from the very commencement was so excessive as to induce us to apply the blister at once, using calomel and stimulants at the same time."

Dr. Collins's views on the use of the lancet in these cases are good and valuable: they are cases which are very far from admitting the indiscriminate use of bloodletting. The combination of calomel with ipecacuanha ("*hippo*,") is very excellent, and we consider that in many of the recorded cases it proved of eminent service; but we feel equally certain (and not from slight experience,) that, if it had been combined with opium in the form of Dover's powder, it would have answered much better. We have, moreover, strong reason to believe that, if the first dose of calomel had been one of eight or ten grains, combined with an equal quantity of Dover's powder, or four grains of pulv. antimonialis, according to the character of the pain, state of the bowels, &c., and not repeated for some hours, that the effect produced would have been more certainly beneficial, and that a much less quantity of calomel would have sufficed. We cordially agree with the remark of the author, in a note to p. 396, "it is supposed by some practitioners that, when we can get the system under the influence of mercury,

recovery is *certain*. This is not the fact, as I have seen several cases where death took place under these circumstance: it is, notwithstanding, a very favorable occurrence." Where he has given large doses of calomel, we regret that so little moderation was used: scruple doses of calomel every two hours is a plan of treatment almost sufficient to anticipate the disease. To his whole series of external applications we feel compelled to object. The hot "*stupes*" (Anglice, fomentations,) relieve the patient for a time; but how can we be sure of their being regularly renewed every two or three minutes, for an hour or two, by a nurse? They generally do more harm than good: the patient is made thoroughly wet and uncomfortable, and the flannels are frequently allowed to remain on long after they have lost their heat. We feel convinced that, in several of the cases recorded by the author, the obstinate return of the abdominal pain was as much the result of this as of any other cause. The only safe and effectual manner of applying heat is by folding a large poultice of linseed meal spread flat in a linen cloth, and covering the whole abdomen with this as hot as the patient can bear it with comfort. When well made, it will retain its heat for four, five, or even more hours, and the beneficial effects produced fully warrant the high encomiums which Dr. Gooch has passed upon it. The other external applications, viz. blisters, mercurial inunction, &c., we have seen applied, and are strongly inclined to hold them in no cases superior to the poultice when properly made, and in many cases far inferior.

To our great astonishment, the whole subject of Puerperal Fever is passed over without the slightest attention being paid to the state of the lochia and vaginal discharge: the word *lochia*, as far as we can perceive, is not even mentioned. We are at a loss to explain the cause of such a singular omission of all notice of the state of a discharge, the regular and healthy secretion of which is of such vital importance in these cases. Of course, therefore, the frequent syringing the vagina with warm water is equally unnoticed, a plan which we have used extensively with the most successful results, and which, independently of its value in washing away any putrid coagula or lochia which may have collected in the vagina, (a source of irritation of the very worst kind,) is of the greatest utility as an internal fomentation to the uterus; frequently bringing on a return of the lochia which had been suddenly checked at the commencement of the attack, and producing a degree of relief not less complete than striking.

The trial which Dr. Collins has given of the oil of turpentine in his practice is certainly not more in its favour as a remedy in this form of puerperal fever: in several cases it appears distinctly to have aggravated the abdominal pain. Whether it was to this cause, or the "*stuping*," or inattention to the vaginal discharge, or more or less of each together, we know not; but we have scarcely ever seen so little relief produced by general and local bleeding, and the use of

calomel and ipecacuanha or opium, as here, although they were judiciously and decidedly employed by the author. We cannot help thinking that these remedies would have acted more successfully if aided by a large hot poultice as above described, by warm vaginal injections, or by a milder and less stimulating purge than turpentine. It would be, nevertheless, unjust towards the author to suppose that the majority of the fatal cases of puerperal fever would have terminated otherwise, even if those alterations in practice which we have suggested had been adopted. Many of them were cases which, from the beginning of the disease, gave little chance of success: still, however, many were cases of a milder form, which might have justified the hope of a more favorable issue. We are surprised that the author has not found the inexpediency of giving jalap, senna, and such like griping purges shortly after labour. We have seen such repeated instances of an attack of abdominal pain succeeding the exhibition of these remedies, and so many relapses from this cause, that we carefully avoid giving this class of laxatives; confining ourselves to castor oil, carb. and sulph. of magnesia, in aq. menth. pip. &c.

Dr. Collins's arrangements for the prevention of this dreadful malady are truly admirable, and do the highest credit to his activity and judgment. Although we have nearly reached our limits, still we cannot alter the original description. Puerperal fever prevailed at the Dublin Lying-in Hospital in February, 1829.

"We had," says Dr. Collins, "all the wards in rotation filled with chlorine gas in a very condensed form for the space of forty-eight hours, during which time the windows, doors, and fire-places were closed, so as to prevent its escape as much as possible. The floors and all the wood-work were then covered with the chloride of lime, mixed with water to the consistence of cream, which was left on for forty-eight hours more. The wood-work was then painted, and the walls and ceilings washed with fresh lime. The blankets, &c. were in most instances scoured, and all stoved in a temperature of between 120 and 130°.

"From the time this was completed until the termination of my mastership in November 1833, we did not lose one patient by this disease. As the wards of the hospital are occupied by the patients in rotation, as soon as each in succession was vacated, I continued the use of the chloride of lime, confining its application to the floors. In this way each ward was washed every ten or twelve days, the solution being left on for twenty-four hours, during which time the blankets, quilts, linen, &c. were suspended, so as to be exposed completely to the chlorine gas, which is copiously disengaged from the preparation mentioned. The chloride of lime was then carefully washed off, and the boards, when dry, polished with a brush. It may appear strange that a process such as stated should be considered advisable in an establishment which is at *all times* kept in the most perfect state of *neatness* and *cleanliness* in every respect; so much so, that few private houses would bear comparison; yet the result consequent on such a practice will fully justify our having had recourse to it. To the ventilations of the hospital, I have

always paid the most strict attention, so that no heated or vitiated air might be suffered to accumulate.

"In addition to the air tubes, &c., as described when treating of trismus nascentium, I had from one inch and a half to two inches of the upper sash of the window most remote from the patient's bed kept open day and night, throughout the entire year, except during extreme cold at night in winter; thereby ensuring a free circulation of pure air.

"All the beds in the hospital are composed of straw; nor is any one used more than a second time without the cover having been washed and the straw renewed. In every instance where the patient *dies*, this is at once done, and, should the most remote symptom of fever have been present, every article connected with the bedding is instantly scoured and stoved; the wood-work and floor washed with the chloride of lime solution, and the entire ward whitewashed: this is readily effected, as the sick are invariably placed in a small ward apart from the healthy. To this precaution too much attention cannot be paid. I am satisfied the *instant* separation is of vast importance to both."

We have but insufficiently treated this important subject; and there are several other points of interest to which we could have devoted some observations; we must, however, extract a case from the next chapter, as coming under the present subject of puerperal fever, and as giving an instance of a peculiar and very dangerous form of this disease.

No. 639, p. 473. "She was delivered on the 13th of February: on the 15th she complained of tenderness of the abdomen, which was removed by leeches and stuping. On the 16th, she suffered from uneasiness in her stomach; and, on the morning of the 17th, her pulse sunk rapidly, and her extremities exhibited in the most marked manner the appearances of diffuse cellular inflammation, particularly the right fore-arm; her strength continued to fail, and she died the same evening, although stimulants and cordials were diligently employed. On dissection, the abdominal viscera appeared healthy; there was a slight blush of redness on the anterior surface of the uterus; the muscles of the body were in a remarkable state of decomposition, particularly those of the right fore-arm, where they appeared in a state of putrefaction. The blood was fluid in all parts of the body."

In our own experience this has been the most fatal species of puerperal fever which we have met with: it differs essentially from the other and more common form. The uterus is seldom affected; there is little or none of that hardness, swelling, and pain of this organ, which is seen in the other form. The pulse is rarely under 130; mostly 140, small, and weak, (at times however hard); the tongue red, streaky, and dry; in some instances great confusion of head; constant vomiting of greenish mucus; tympanitis coming on rapidly, without the usual degree of abdominal pain; the sudden collapse, with cold tongue and extremities; dusky appearance of the face, and large patches of livid ecchymosis upon the extremities. One of the most singular features of the disease is the enormous

collections of ill-conditioned pus, forming in different parts of the body, especially in the muscles of the extremities. An indurated painful spot is felt, for example, in the muscles of the fore arm; a spot more frequently observed by us to be affected than any other part. The extremity becomes stiff and immovable; the induration increases in extent; fluctuation follows; if the patient lives long enough, an immense collection of pus is formed. Perhaps it can scarcely be called pure inflammation of the cellular tissue. On examining after death extremities of this sort before fluctuation had commenced, the whole cellular tissue appeared in a half-dissolved state; the muscles firm to the feel, but easily torn through; their natural colour entirely changed for a dirty ashy hue, more like boiled meat than anything else. The fluid state of the blood as noticed by Dr. Collins is also a remarkable fact; the blood in those cases which have come under our notice resembled considerably thin claret in appearance. The disease appeared to consist very much in a morbid state of the circulating fluid, and the relief afforded by alkaline and saline remedies seems to confirm this view.

At P. 476, No. 745, we are sorry to meet with another instance of what appears to us highly objectionable practice. "The patient was admitted in a high state of fever," p. 120, "tongue loaded, teeth covered with sordes;" it was her first labour; "the urine was three times removed by the catheter, and, on its last introduction, a considerable quantity of bloody fluid came away," and yet she was allowed to remain in this state twenty-six hours before art was employed to deliver her. No bleeding or other treatment is mentioned. We cannot imagine any reason for keeping this poor creature in severe suffering until her almost moribund state gave warning that she would die undelivered, if left any longer to herself: as it was, "she was delivered on the 12th of August, and lingered until September 3d, when she died."

It seems to us a matter of surprise that, in cases requiring the crotchet, and where the mother was delivered artificially in her former labours, artificial premature labour was not thought of. Nos. 1005 and 1032, p. 480, are instances of this: the first patient had only one child alive, (her seventh,) having been artificially delivered in her previous labours; in the other case, it was the "fourth time that she had been delivered *artificially*. Fifteen months since she was delivered in this hospital with the crotchet." Artificial premature labour is not even hinted at by the author, yet, in our own experience, it has been attended with the happiest results.

The next case (No. 1038,) we must be allowed to give verbatim; the reader will then be better able to judge for himself concerning it.

"This patient was admitted in labour of her first child. Uterine action was feeble, and continued so for seventy-two hours after she came in. As the foetal heart had ceased to act for some time, and the pulse became hurried, it was considered advisable to deliver her. The os

uteri was not fully dilated; the head was high, and resting above the pubes; it was lessened, and cautiously brought down with the crotchet. Severe abdominal inflammation set in shortly after delivery, which resisted the most prompt and active treatment, and proved fatal on the sixth day." (P. 481.)

As the foetal heart had ceased to beat for some time, and her pulse was becoming flurried, Dr. Collins thought it advisable to deliver her. This has been his rule nearly, if not entirely, throughout the work: its results we have already shown. But, supposing the foetal heart had *not* ceased to beat, in order to let him perforate, what was to be done then? Wait seventy-two hours more;—i. e. if the mother had lived so long? "The os uteri was not fully dilated, the head was high and resting on the pubes." This being the case in a primipara, even for twenty-four hours, ought to have given ample proof of a narrow pelvis. This, and the many other similar cases which we have commented on, do not exactly confirm Dr. Collins's assertion at p. 2, that no useful information is to be gained by examination in the early stages of labour. The pelvis was an unusual one; it was evidently the "pelvis æqualiter justo minor" of the German schools, being three and a half inches from pubes to sacrum, and four and a half transversely.

Dr. Collins's practice among the children appears to have been very successful, and we regret that we have been favoured with scarcely any details of infantile management at this early and interesting period. We must refer the reader to a quotation respecting the mortality of children at the end of our statistical observations.

The *Trismus nascentium* appears to have been a most prevalent and fatal disease in the hospital in former years. The author quotes a passage from Dr. Joseph Clarke, wherein he states that "at the conclusion of the year 1782, of 17,650 infants born alive in the hospital, 2,944 died within the first fortnight."

"That is," says our author, "nearly every sixth child, or about seventeen in the hundred: about nineteen of every twenty of these, he adds, died of *nine-day fits*. He considered a foul and vitiated state of the air in the wards of the hospital to be the principal cause of this disease: to counteract which, he had apertures of considerable size made in the ceilings of each ward, (these have been since changed for air-tubes, six inches in diameter, passing to the roof;) three holes of an inch diameter were made, in an oblique direction, through each window-frame at top; the upper part of the doors opening into the galleries were also perforated with numerous holes. By these means a free circulation of air was at all times secured through the wards, and effected in such a way as put it out of the power of the nurses to control it. The consequences of these alterations, as stated by Dr. Clarke, were favorable beyond the expectation of the most sanguine. Of 8,033 children born subsequently to the wards being ventilated as described, only 419 died; that is, about one in nineteen and three-quarters, or from five to six in one hundred, instead of the enormous mortality before mentioned."

With these quotations we close our review of Dr. Collins's work. That it has been carefully analysed, we trust is proved by our observations; that we have acted impartially, we hope is also shown by our readiness, nay even anxiousness, to give the author the full meed of praise, wherever it was due. We have, it is true, differed from him essentially on certain points of his practice; so much so, as to censure it here and there in the most unequivocal manner. We should not have acted fairly to ourselves, or to our obstetric brethren of Great Britain and Ireland, to have tacitly approved of these portions of his practice, by passing them by without full and sufficient comment. Still, as a whole, the work is very creditable to the author. As a statistical record, it will be always useful and interesting; but we cannot forget how much more might have been made out of such an ample field for observation and enquiry.

#### ART. IV.

*Mémoire sur une Manière nouvelle de pratiquer l'Opération de la Pierre.* Par le BARON DUPUYTREN. Terminé et publié par L. J. SANSON, Chirurgien de l'Hôtel Dieu, &c., et par L. J. BEGIN, Chirurgien en chef à l'Hôpital Militaire de Strasbourg, &c. Avec dix Planches.—Paris, 1836. Grand Folio. Pp. 50.

*Memoir on a new Method of Cutting for the Stone.* By BARON DUPUYTREN. Completed and published by J. L. SANSON and J. L. BEGIN. With ten Plates.—Grand Folio. Paris and London, 1836.

THERE is no bodily affliction to which the attention of the surgeon has, during all ages, been so constantly directed as stone in the bladder; and there is no operation which has been so variously performed, or upon which so much skill and inventive faculty have been brought to bear, as that for its removal. From the period of Celsus, who described the operation of lithotomy as it was performed by Ammonius of Alexandria and Mege at Rome, down to the present time, there will hardly be found a surgeon or a medical writer of any celebrity who has not devoted some of his pages to this subject. Instruments have been heaped upon instruments, varying in number and complexity, from the simple knife employed in the older times for cutting on the gripe, to the chest of tools which accompanied the surgeon who extracted the stone according to what was called the "apparatus major;" a name which doubtless became associated with the operation in consequence of the multiplicity of instruments made use of in the performance. The bladder has been successively assailed from all sides, and attacked at every point which offered the remotest chance of penetrating to the interior. Cautious timidity, doubtless the offspring of immature knowledge and reckless temerity, the result of utter ignorance, seem by turns to have directed the hand of the surgeon.

At one time the seat of mischief was approached with all the slowness and foresight of a wary general, desirous of securing the fortress with the least possible injury to its wall: at another, it was stormed with violence, and carried by a *coup de main*, which, while it succeeded in dislodging the enemy, involved the ruin of half the citadel which had contained him.

It is rather a curious fact, that the particular mode of operation which forms the subject of the work now before us should be almost identical with that described and recommended by Celsus, nearly two thousand years ago. The Baron Dupuytren, in a short memoir on the history of Lithotomy, declares his "new method" to be nothing more than a revival of that which was first promulgated at Alexandria and Rome, somewhat modified indeed by the result of his experience, and reduced to scientific principles by a more accurate knowledge of anatomy.

The Essay, to the consideration of which the succeeding pages will be devoted, was never completed by the Baron, although in the press at the time of his death. An extract from his will, which appears in the title-page, tells us that he appointed MM. Sanson and Begin to bring it before the public. It is therefore the more valuable, as being the last of his literary labours, as containing his ultimate opinions, and embodying the results derived from the experience of a whole life. We hasten, therefore, to lay before our readers a condensed view of the memoir, using, as far as our limits will permit us, the author's own words in all the more important passages.

The attention of M. Dupuytren had long been directed to the operation of lithotomy. Dissatisfied with the large average of deaths which followed the removal of the stone according to the ordinary methods, he applied himself earnestly to the task of investigating the causes of so many fatal results; of comparing the relative advantages embraced by the various means which had been resorted to from time to time for the extraction of calculus, as well as the objection to which each was liable; and of ascertaining whether a safer, a surer, and more expeditious mode of entering the bladder might not be adopted; one that would supersede the lateral operation, and the corresponding section of the prostate gland by the knife or single-bladed *lithotome caché*, the instruments usually employed in France for that purpose. We shall pass over his observations on these subjects, which include an elaborate and very beautiful anatomical essay on the parts situated between the bladder and perineum, illustrated by superb engravings, in order that we may at once proceed to his description of the "*Méthode nouvelle*," which was the result of his investigations and experience.

"To incise the integuments, and cut through the superficial muscular and aponeurotic layers down to the urethra; to open the canal to a sufficient extent; to make a lateral division of the neck of the bladder and the prostate gland on either side: these constitute the three principal steps of



the new operation, which it was our object to render as easy, as certain, and as safe as is compatible with the existing degree of perfection in the surgical art. To accomplish this, it was necessary to review the instruments usually employed, and to introduce some important modifications of them. Our attention was first directed to the staff, the use of which is to render the canal of the urethra solid, conspicuous, slightly projecting, and easy to enter. The staffs in ordinary use, being too strongly curved and too much prolonged beyond the curve, were found not to correspond exactly with the canal they were destined to traverse and to occupy.\* Their deficiency in bulk, and the smallness of the groove, rendered it difficult to feel them with precision through the walls of the urethra and the soft textures which cover the canal. The consequence of these defects has been, that even skilful surgeons have occasionally found themselves embarrassed in the attempt to discover and open the urethra, or that the knife has missed the groove of the staff, by slipping over its side; or, again, that, after its introduction, it has quitted the canal, and passed into the surrounding structures.

"The staff which we have adopted is made of wrought steel, and presents a curve rather more decided than that of the common 'algæes.' It is furnished with an ebony handle, the surfaces of which are rendered flat and rough, in order that it may not slip through the fingers of the assistant whose business it is to hold it. Towards the middle of the instrument, or just in the centre of the curve, it presents an enlargement, continued along the extent of about two inches; and this enables it to fill accurately the urethra. The groove is large and deep, with its edges rounded, turned outwards, and as it were everted; so that it may be easily recognized by the touch, even through a considerable thickness of soft parts. The extremity of this instrument is rounded, and terminates in an olive-shaped beak, which enables it to slide smoothly through the urethra, separating the parietes of the canal by unfolding them, and thus opening a passage to the expanded portion which is to follow. Lastly, the groove is gradually reduced in size, until it disappears altogether towards the extremity of the staff: this is done to obviate an inconvenience which has sometimes accompanied the use of the common instrument,—viz. the arrest and retention of the lithotome at the sudden termination of the groove, so as to render its extrication difficult.

"There is no doubt that a convex bistoury, with a firm blade, will sufficiently answer the purpose of dividing all the external parts and opening the urethra. We found it, however, more convenient to employ a double-edged knife, rounded towards the point, and with the blade fixed into the handle. Such an instrument makes a neater section of the tissues, is firmer in the hand of the surgeon, and likewise enables him (when the point is once planted in the groove of the staff,) to divide the urethra backwards and forwards, without removing it for the purpose of reversing the direction of the cutting edge.

"It cannot be denied that the *lithotome caché* of Frère Côme, or the

\* It may be necessary to observe, that the common French staffs are much more curved and prolonged towards the extremity than those used for the same purpose in England. Even the reduction which M. Dupuytren has effected in this respect does not bring the instrument within the English standard, as may be seen by the plate which accompanies the memoir.

*bistouri boutoné*, are either of them competent to effect the division of the neck of the bladder and the prostate gland on both sides; but for this purpose they require a double introduction and a double manipulation, which not only prolongs the operation, but precludes the possibility of ensuring a symmetrical form to the entire incision, or giving it an equal extent on each side. A double lithotome is capable of obviating these important objections, because the two blades, separating from a common stalk and expanding in the bladder, cannot fail (on its withdrawal,) to make, through the neck of the bladder and prostate gland, a double incision, the precise limits of which may be accurately defined." (P. 23.)

The instrument made use of by the Baron in his latter operations was the double lithotome, invented, or rather improved upon, by M. Charrière. A very minute and technical description of it is given in the text, which we may condense by observing that it consists of two long narrow blades, folding upon each other, and concealed in a case which is slightly curved; and adapted, by its size and shape, to be passed along the groove of the staff into the bladder. Thus, the instrument is introduced through the urethra without injury to the parts, while a mechanical contrivance attached to the handle allows the blades to be expanded after it has been lodged in the bladder: they quit the sheath on either side, and, when separated, resemble the blades of a pair of scissors with the cutting edges reversed. In this state the instrument is withdrawn, and cuts its way out. The size of the opening produced, of course depends upon the extent to which the blades have been expanded, their degree of separation being indicated by an index.

*Description of the Operation.* "The patient should be placed in the common position adopted for performing the lateral operation. At one period we imagined that the surgeon might retain the staff in the bladder with the left hand, while with his right he cut into the perineum; but this method, which perhaps is feasible in the operation of Frère Jaques and Frère Côme, is not in the present instance to be recommended, as the left hand becomes necessary for the purpose of rendering the soft parts tense, and the left fore-finger must be used as a guide down to the groove of the staff. After the presence and probable size of the stone has been ascertained by the staff, the surgeon should give to the latter a vertical direction; so that the straight portion of the instrument may form a right angle with the axis of the body, while the curve should be kept somewhat elevated towards the symphysis pubis, rather than pressed downwards and backwards upon the rectum. A dextrous and trustworthy assistant should retain it precisely in this position. The surgeon then, with a double-edged knife, makes a semilunar incision across the perineum, cutting through the raphe about six lines anterior to the anus, towards which aperture the concavity of the wound is directed. The skin, the subcutaneous, elastic, cellular tissue, the superficial perineal aponeuroses, and the connexion between the sphincter muscle and the posterior extremity of the bulb, should be successively divided to the same extent as the external incision, until the staff and its groove can be distinctly felt. During this part of the operation, the mind should never lose sight

of the direction of the urethra, and its relative position with regard to the intestine. The knife should be carefully kept away from the anterior bulging surface of the gut, and should be made to pursue the direction of an imaginary line, extending from the anus towards the anterior surface of the bladder and the hypogastrium. In more than one instance, while operating on the dead subject, the knife, from being directed too much backwards, has passed into the posterior region of the urethro-anal triangle, and pierced the rectum, instead of entering the urinary canal.

"The lower wall of the urethra should then be entered with the point of a knife, having a double-edged blade fixed in the handle; so that, by an easy motion backwards and forwards, the groove of the staff may be laid bare to the extent of about three or four lines. One important remark presents itself with respect to this incision: it is, that the point of the instrument should be carefully retained in the groove, in order to preclude even the possibility of its passing backwards, and denuding or perhaps piercing the rectum; the surface of which, at the apex of the triangle, comes nearly in contact with the prostate and urethra.

"The nail on the fore-finger of the left hand, which has been retained in the wound, should now be introduced into the groove of the staff, where it serves as a guide for the lithotome, the blunt extremity of which passes with ease through the incision. The convexity of its curve should be directed backwards towards the rectum, so that, while the concave surface is applied to the staff, and accommodates itself to the direction of the parts, it may the more readily be slid on wards into the bladder. The well-known sensation produced by the immediate contact of two metallic bodies informs us that the lithotome is well placed: the surgeon then seizes the staff with his left hand, raising it towards the pubes, and pushing its extremity more deeply into the bladder; while, at the same time, he introduces the lithotome along its groove.

"The staff should be withdrawn as soon as the flow of urine from between the instruments, and the striking of the calculus, indicate that this second step in the operation has been accomplished. The lithotome is then turned round, so as to direct its concavity backwards, and, after first using it as a sound for measuring the size and ascertaining the situation of the stone, the surgeon expands and slowly withdraws it from the bladder, at the same time gradually depressing the handle towards the anus, until the blades are completely disengaged from the wound. The instrument is thus made to pass over the projection of the rectum, and the possibility of the extremities of the blades approaching too near the walls of the intestine is altogether done away with.

"As soon as the lithotome has been withdrawn, the fore-finger of the left hand should be introduced into the bladder, for the purpose of measuring the extent of the incision, of ascertaining the condition of the parts, and, lastly, that it may serve as a guide for the forceps. The finger should bear against the posterior wall of the incision, in order to prevent the possibility of the forceps being passed between the bladder and rectum; which accident has been known to occur.

"We should find a difficulty in expressing how greatly the subsequent steps of the operation, for the purpose of discovering, seizing, and withdrawing the stone, become simplified and facilitated by adopting this

method. If the foreign body prove soft and friable, the short and capacious passage allows us to wash out the bladder with copious injections of water, and thus to get rid of even the very smallest fragment that had been retained. It offers similar advantages in those not very uncommon cases where, from the presence of several calculi, it becomes necessary to reintroduce the forceps, and to repeat the manipulations for the extractions of the stones again and again.

"The details into which we have thus entered may be considered as affording sufficient evidence of the superior claims which this new method of operating possesses over that which has hitherto received the majority of favorable opinions." (P. 25.)

We shall pass over a short historical record, in which the author shows that he has but resuscitated and modified the old operation of Celsus, in order that we may proceed to the enumeration of the advantages which, in the opinion of M. Dupuytren, are to be derived from the bilateral section.

"1st. It is easier and quicker than most of the other methods, as well as equally safe.

"2d. The incision is made in the largest part of the lower outlet of the pelvis; a circumstance of such paramount importance in all operations for stone, that we may fairly estimate the comparative merit of different methods by taking into consideration the distance of the incision from that point; the operation being more or less eligible as it is commenced at a greater or less distance from the symphysis of the pubes.

"3d. It opens a more direct road from the surface of the perineum to the cavity of the bladder than any of the other methods, and very much facilitates the introduction and the manipulation of the instruments, the extraction of the stone, and the flowing away of the urine.

"4th. It is also better adapted for making an opening proportionate to the volume of the stone, and for extracting it without violence, dragging, distension, or laceration of the parts: it is therefore calculated to diminish the probability of subsequent inflammation in the neck or body of the bladder, the peritoneum, the kidneys, the cellular texture, &c.

"5th. The prostate gland can never be completely divided, however freely we may find it necessary to carry the incision through its substance.

"6th and 7th. While it affords the means of making a very large opening, the ejaculatory ducts are secured from all liability to injury. At the same time it enables us to avoid the large vessels, and prevent the hemorrhage which so often supervenes on the lateral operation.

"8th. Lastly, it is applicable to all ages, to both sexes, and to calculi of every size." (P. 28.)

In this memoir we find two statistical tables; the one showing the result of 356 lithotomy operations, performed in Paris and its environs during ten years; the other exhibiting the issue of eighty-nine cases in which the new method, or bilateral section, was made use of. In the former table the number of deaths are sixty-one, or rather more than one in six; the latter presents a mortality of nineteen, or one in four and two-thirds.

Were these tables to constitute our criterion for comparing the

relative merit of the two operations, the "new method" would present any thing but a cheering prospect, and is certainly not much calculated to raise our opinion in its favour. It would not, however, be quite fair to submit it definitively to this test, more especially as the eighty-nine operations referred to were performed by various surgeons, all of whom might not be equally skilful, and consequently not equally successful in practising the bilateral section. But we cannot forbear expressing our disappointment, when we find that the advantages, which are so prominently brought forward and so highly extolled in the memoir, fall so short of our expectations, become so feebly maintained, or, it would be more accurate to say, are so palpably contradicted by the result of practical experience, as far as this has yet gone.

It is by no means our intention to throw down the gauntlet before the shade of this distinguished surgeon. We are convinced that our professional brethren will receive with gratitude the legacy bequeathed to them by so great a master; and those even, who, by a long course of practice in the operation for stone, may have fully satisfied themselves as to the best and most efficient method of opening the bladder, will pause, ere they reject as wholly inadmissible the evidence of such high authority. We might justly incur the reproach of national prejudice, of a deficiency in good taste and good feeling, did we attempt to impugn the experience of a long and active life; and it is with feelings of the most profound respect, combined with no small degree of diffidence, that we venture to criticise the opinions to which that experience has given birth. In the foregoing pages we have abstained from introducing any remarks of our own, convinced that we should best consult both the interest and the inclination of our readers by laying before them a condensed outline of the Baron's work, comprising all that is important as regards the operation itself and the advantages which it promises.

We were the more inclined to adopt this course, in the first place that we might do ample justice to the author, and again because the splendid and expensive manner in which the book is got up must effectually prevent it from enjoying a very extensive circulation. We may now, however, be allowed to make a few observations on a subject of so much importance, and perhaps to enter into a brief enquiry:

1st, as to the causes which render the ratio of mortality after lithotomy heavier in France than in this country; 2d, respecting the lateral operation itself, as it is performed by ourselves and by our French neighbours; and 3dly, whether the causes of death are diminished by the "*Nouvelle Methode*," or bilateral section.

At the commencement of the memoir, M. Dupuytren deploras the heavy average of deaths, which, according to his own statement, consists of one in every five or six patients who undergo the operation. It is to be regretted that the medical literature and records of

our own country furnish us with very few similar tables whose accuracy can be depended upon: but we have no hesitation in stating our conviction that the sum-total of cases operated upon in England during the last twenty years would present a rate of mortality less by one-third than that exhibited in the French report. According to the information which we have been able to collect on the subject, deduced partly from the registers of public institutions, but principally from enquiries among the most experienced lithotomists, the average number of deaths may be fixed at one in eight.

Mr. Crosse, in his late work "*On the Urinary Calculus*," has furnished us with the account of 704 cases which had been cut at the Norwich Hospital during a period of above sixty years. These present an average mortality of one in seven and about three-fifths; and we are inclined to believe that the estimates of the distinguished surgeons who have operated there during the last twenty or thirty years, as well as those of most of the other skilful and successful lithotomists of this country, would display an average of success rather above than below the standard which we have fixed. We again repeat our regret for the scanty information which our statistical reports afford on this subject, a subject of the more importance, because, as it would appear to us that a pretty broad line of distinction exists between the methods employed in France and England for the removal of calculus, it becomes a matter of the greatest interest to ascertain with the utmost accuracy the result of the two modes of treatment in a large mass of cases.

Dr. Marcet, in his "*Essay on Calculous Disorders*," gives a statement of 506 lithotomy cases which occurred in the Norwich Hospital between the years 1772 and 1816. Of these, 70 died or 1 in 7 $\frac{1}{4}$ . The result of operations since that period, of which there appear to have been 198, has reduced the total amount to 93 in 704, making an average of 1 in 7 $\frac{1}{2}$ , and shewing an increase of success during the last twenty years; since of these 198 cases only 23 died, or 1 in 8 $\frac{1}{2}$ .

In 529 out of the total 704 cases, as recorded by Mr. Crosse, the calculus did not exceed 3i. in weight, and in most instances was considerably less: 47 of these died, making an average of 1 in 11 $\frac{1}{4}$ .

Chesselden, during a period of twenty years, cut 213 patients, and lost 20, or 1 in 10 $\frac{3}{4}$ .

We endeavoured to obtain a more complete result of the average mortality, by comparing the tables which Prout, Marcet, Smith, and some others, have taken great pains to collect and furnish on this subject; but the numerous discrepancies which existed in the different statements proved that there must have been some inaccuracy in the source from which they were derived.

According to Dr. Prout, the average number of deaths which occurred in the Leeds Infirmary after lithotomy, between the years 1767 and 1817, was 1 in 7 $\frac{1}{2}$ . In the Bristol Infirmary 1 in 4 $\frac{1}{2}$ .

The mean ratio of mortality in the Bristol, Leeds, and Norwich Hospitals, he estimates at 1 in 7 $\frac{1}{2}$ .

Assuming, however, that the advantage is on our own side, we will venture to ask whether this advantage does not result from two causes. In the first place from a more judicious selection of cases, in which we can hope to confer benefits by removing the stone; and, again, by a superiority in our method of performing the operation. It not very unfrequently happens that stone is accompanied by other complaints, which preclude the possibility of a successful issue after its removal, more particularly in the adult subject, where renal disorder, or enlargement and disease of the prostate gland, give rise to the cachectic state, the gradual failing of the powers of life, to general irritation and a train of symptoms, which are apt to be wholly ascribed to the presence of the calculus, and which are therefore expected to subside after its extraction. The organic alterations and functional derangement of the kidneys, with their widely spreading effects on the general system, have been hitherto but little noticed among the French; and we have every reason to believe that many cases, in which we should consider the prospect of the operation as hopeless, and which are susceptible only of palliative measures to render the remainder of life as little wretched as possible, would there be at once condemned to the knife, on the principle that a foreign body existed in the bladder which must be got rid of *coute qui coute*. Indeed, we have reason to doubt whether the previous condition of the patient, the means of preparing him for the operation, or the subsequent treatment, are so seriously weighed and attended to, or so well understood in France as in this country.

We shall presently offer a few remarks on the detail of the operation itself; and we shall now only suggest, in general terms, whether the greater mortality in France may not in some measure be attributed to the exertion of an undue degree of violence for the extraction of the stone; a violence, from the practice of which we are perhaps not wholly exempt, but which certainly is more reprobated and discouraged here by our best lithotomists than is the case among our neighbours. We will ask whether the safety of the patient has not been sacrificed to the *éclat* of the operation; whether a saving of a few seconds of time in the performance is not occasionally sought for, and gained at the expense of a bruised prostate, a laceration of the neighbouring cellular connexions, and the almost inevitably fatal consequences which ensue thereon? A little less feeling of personal vanity, and we must add a little more attention to the dictates of humanity; a little less desire to secure the applause of the multitude assembled, delighted to see the stone conjured from the bladder into the hands of the operator, yet scarcely understanding how the process was effected; and a little more care and foresight directed towards the ultimate success of the operation,

might possibly be more frequently rewarded by the consciousness of lives positively saved by it, as well as by the gratitude of those who had been restored from disease and misery to a state of health and vigour.

We feel the less hesitation in making the foregoing observations, as they involve a general principle which we shall always be proud to cherish and maintain, while we would disclaim in the strongest manner their personal application to the illustrious individual, whose very work now before us affords the most direct evidence how anxious he was to render the result of his immense experience subservient to the cause of humanity, and with what readiness he employed his splendid abilities to alleviate the sufferings of his fellow-creatures.

In an early part of the memoir, Mr. Dupuytren has enumerated the causes which lead to a fatal termination after the operation of lithotomy; they are shortly these: Nearly two-thirds of those who perish after the operation die from the effect of inflammation attacking the bladder, the cellular texture of the pelvis, the rectum, the small intestines even as far as the stomach, the peritoneum, the kidneys, the pleura, the lungs, and the liver. These latter organs being situated at a distance from the seat of operation, cannot of course become affected from continuity of texture, but are probably predisposed to disease, and, under the general irritation of the system, take on an inflammatory action. About a fourth of the fatal cases die of hemorrhage and its consequences, while the small residue sink under various concomitant and accidental disorders. These inflammations of the bladder, pelvic fascia, and neighbouring viscera, all seem to have their origin from the immediate vicinity of the incision by which the bladder was entered.

Are they not all referable to one cause, viz. the extreme narrowness and want of room at the part where we seek to divide the prostate and neck of the bladder? This space is so straitened, that we are unable to limit our section within the bounds prescribed by the conformation of the parts, without incurring difficulties of a dangerous nature during the extraction of the stone; while, on the other hand, if we exceed these bounds, we run the risk of introducing a most active source of inflammation into the midst of the pelvis. Thus we occasionally find, on examination, that our incision has been carried fairly and completely through the prostate and neck of the bladder into the adjoining cellular tissue; allowing the entrance of the urine, and giving rise to inflammation which commences in the above structures, and spreads throughout the pelvis to the rectum and peritoneum. Again, we sometimes find the left lobe of the prostate but imperfectly divided, while the surfaces of the section are contused, lacerated, softened, and gangrenous. Here also the inflammation will be seen to commence at the wound, and subsequently extend to the pelvic cellular membrane, the rectum, and peritoneum. In both instances, the destructive process origi-



nates from the wound itself, but it is produced in each by a different cause. In the one, the knife had at once been carried into those structures where the mischief is so readily set up; in the other, the opening had been too small to allow of the removal of the stone without having recourse to dangerous violence.

Our own experience and observation lead us to concur in the statement of Baron Dupuytren, that the immediate cause of death may in most instances be ascribed to an inflammatory and suppurative process, commencing in the cellular tissue around the prostate and neck of the bladder, and extending subsequently to the peritoneum and adjacent structures; but we must be allowed to differ from him as regards the more remote cause of this inflammation, the *fons et origo* which he so strongly refers to the wound itself. At all events, we doubt the correctness of his views as applied to the mode of performing the lateral operation in England, and the principle on which it is conducted. Thus, if the section of the prostate be dexterously performed,—if the knife be carried through that body, with an obliquity outwards and backwards, the sub-peritoneal cellular membrane, which is that most susceptible of injury and morbid impressions, is never entered at all, let the incision be prolonged to ever so great an extent. The bladder is opened altogether outside the fascia, which, after lining the walls of the pelvis, becomes connected to the side of the neck of the bladder and prostate gland, and which thus constitutes a septum between the interior of the pelvis, and the lower outlet of that cavity; a septum which, if the operation be properly conducted, is rendered available for the purpose of excluding our incision from the loose, sub-peritoneal, pelvic tissue, and making it communicate only with the external wound. Under these circumstances, no parts are cut into which are very acutely sensible to the contact of the urine; and, furthermore, the hemorrhage from the divided vessels almost immediately infiltrates the surfaces of the wound, and generally prevents the entrance of the acrid fluid into the cellular membrane.

Neither do we think that M. Dupuytren is more fortunate in his second proposition, where he ascribes a similar train of inflammatory actions to the lacerated and bruised condition of the prostate gland, and commencing from the injured surface itself. It is the dragging forwards of the prostate gland before the forceps, during the unavailing efforts to extract the stone through too small an opening; it is the tearing it away from its connexions to the pubis and rectum, and not the injury to its substance, which produces the subsequent inflammation and suppuration around that body.

Our limits will not allow us to pursue this subject farther; but in whatever structure we may be inclined to place the original source of mischief, the object of the Baron is evidently to trace it to one cause, viz. the principle of the lateral operation itself; in the performance of which, he considers it impossible to make an ample and sufficient incision, unless we invade structures the lesion of

which will endanger the life of the patient. These arguments may be valid in France; it is most probable that they are so; but we are quite certain that the same objections do not apply to the lateral operation as it is performed in this country, more especially where the section of the bladder and prostate is made by the knife which was first introduced by Cheselden, subsequently adopted and improved upon by Mr. Key, and now commonly employed by the majority of British surgeons. The instrument which in France is almost universally adopted for the purpose of opening the bladder is the single *lithotome caché*, which is totally inadequate to effect a very free incision. The blade is also made to assume a nearly horizontal direction, in order that the safety of the rectum may be ensured: for this instrument is by no means susceptible of the delicate manipulations which may be practised with the knife in the hands of a skilful operator. A double disadvantage is thus incurred. In the first place, the incision is limited by the ramus of the pubic arch; and, in the second, the horizontal section of the prostate, if carried through that organ, will trench upon parts which it is dangerous to disturb. This is precisely the dilemma of which M. Dupuytren complains, and to remedy which he has suggested and adopted the "*Nouvelle Méthode*;" but it appears to us that his objections urged against the old operation do not at all impugn its principle, although they certainly militate against the mode of executing it in his country. We believe that our French neighbours are hardly aware of the latitude of incision allowed by the use of a simple long-bladed knife, which, under the guidance of a dexterous surgeon, may be carried down by the side of the rectum, sweeping, as it were, round the intestine and producing a section which it is impossible to accomplish with the single-bladed *lithotome caché*. The length of the incision is not limited by the ramus of the ischium, because the direction given to the instrument is such, that it would clear the bone, even were it to be carried backwards as far as the sacro-sciatic ligaments. The incision approaches more to the vertical, stretching longitudinally instead of horizontally, and, although it is bounded on one side by the ramus of the ischium and pubis, yet on the other are situated the soft parts of the perineum and the rectum, which will readily accommodate themselves to the passage of the stone, without fear of laceration. Another facility for the extraction of the calculus is also secured by the very free division produced through the deep perineal fascia; an advantage which is not obtained even by the bilateral operation.

In what then do the advantages of the *nouvelle méthode* consist when we compare it with the lateral operation as practised in this country? They appear to be simply these:—1. It enables the operator to elude the larger vessels of the perineum.\* 2. It avoids

\* In the subjoined table, out of the nineteen fatal cases, two patients will be found to have sunk from hemorrhage; but, as no statement is made of the precise vessels which

the necessity of laying open so great an extent of the urethra, since the canal is cut into much nearer to the bladder. 3. By including both sides of the prostate gland, it allows of a more extensive incision through that organ without completely dividing it, and consequently without implicating the surrounding plexus of veins, which sometimes prove a fruitful source of hemorrhage. 4. It secures the ejaculatory ducts from all liability to injury.

On the other hand, it must be borne in mind that the opening into the bladder is necessarily limited to the width of the prostate gland, and that by no means at its broadest part. It must also be remembered that the transgression of these bounds involves a much greater risk of mischief than can be incurred by the oblique section of the prostate. If we take into consideration the more superficial part of the wound, we shall find that the perineal fascia will be but imperfectly divided, and that the incision, being transverse, must of course be limited by the rami of the ischia on either side.

One word on the danger of cutting the rectum during the operation of lithotomy. We believe that this is a circumstance of rare occurrence in this country, although, from the repeated allusions made to it by the Baron, from the care and caution which he recommends, and the rules which he lays down to avoid such an accident, we presume it not so unfrequently happens abroad. Now, at what step of the operation is the rectum in most danger of being wounded? Certainly not during the section of the prostate gland and neck of the bladder. It is during the division of the muscles and fasciæ of the perineum, while seeking for the groove of the staff, and before the urethra is opened, that the integrity of the intestine is likely to become compromised; or it may possibly incur a risk at a subsequent period, when the knife has been introduced a second time into the bladder, for the purpose of enlarging an opening which was found too small for the extraction of the stone. A competent knowledge of anatomy, and a certain degree of manual dexterity, will, we believe, in either case, ensure the gut from all liability to injury; but, if any danger is to be apprehended in the former instance, or during the process of exposing and opening the urethra, we cannot doubt that such a danger is considerably augmented by the adoption of the transverse bilateral section, which brings the knife so much nearer to the anterior surface of the rectum than in the performance of the common lateral operation. The minute directions afforded by the Baron on this subject during the steps of the first incision, is the best proof of the correctness of our opinion.

Upon taking an impartial view of the subject in all its bearings, we do not see that the bilateral method is at all calculated to obviate

were wounded, it is difficult to say whether this was an accidental untoward occurrence, or whether the divided arteries were those which run the risk of injury and occasionally produce the same fatal result after the lateral operation.—REV.

those difficulties, those untoward circumstances, which occasionally present themselves, and which render the operation tedious and dangerous: we mean the presence of large calculi, a peculiar conformation of pelvis, an unusual depth of perineum, or a diseased and irritable condition of the urinary organs.

When this memoir was first put into our hands, we eagerly perused it in the hope of finding what has long been a desideratum among lithotomists, viz. a mode of operating which should enable us to triumph over cases of unusual difficulty and embarrassment. We shall leave our readers to draw their own inference as to how far such an object has been attained, and shall merely subjoin for their inspection the statement respecting the apparent cause of death in those who sunk after undergoing the bilateral operation. We copy the report verbatim from the table already referred to. This table contains eighty-nine cases: four of these were females, all of whom recovered. Of the remaining eighty-five males, nineteen died, making an average mortality of one in four and a half.

“Among the nineteen fatal cases just referred to, death was apparently occasioned

From cancer of the bladder, in . . . . .	1 case;
From the trilobular form of the bladder, which retained several calculi in one of its pouches, in . . . . .	1
From a calculous affection of the prostate . . . . .	1
From the result of difficulties, depending	
1st. On the narrowness of the perineum . . . . .	1
2d. On the excessive depth of the perineum . . . . .	1
3d. On the volume of the stones . . . . .	2
From subsequent spasm and delirium . . . . .	1
From gastro-enteritis . . . . .	1
From laceration of the prostate . . . . .	1
From hemorrhage . . . . .	2

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12

“In the remaining seven cases,—that is to say, in seven cases only out of eighty-nine operations,—the patients sunk under inflammation of the bladder and the cellular tissue; produced merely by the effect of the operations, which in themselves were not accompanied with any unusual circumstances.” (P. 32.)

We cannot, in justice to the editors and publishers of this work, pass over, without one word of commendation, the beautiful and indeed magnificent style in which it is produced. The plates are admirable specimens of art, and show the very high pitch to which lithographic engraving has been carried. This is one of the books of which the Brussels press may give us the letterpress, but cannot, we conceive, reproduce either the splendour or the elegance.

## ART. V.

*An Essay on the Laryngismus Stridulus, or Croup-like Inspiration of Infants. To which are appended, Illustrations of the general Principles of the Pathology of Nerves, and of the Functions and Diseases of the Par Vagus and its principal Branches.* By HUGH LEY, M.D., Member of the Royal College of Physicians of London, Physician to the Westminster General Lying-in Hospital, Physician-Accoucheur to the Middlesex Hospital, and Lecturer on Midwifery at St. Bartholomew's Hospital. *Illustrated with Plates.*—London, 1836. 8vo. pp. 480.

WE have frequently had reason to regret, in common with other practitioners, the various perplexities in which the disease which forms the subject of this essay was involved, and the utterly discrepant opinions that existed concerning it. We may venture indeed to assert that, in the lamentably long catalogue of maladies of which doubtful pathological and therapeutical opinions have been hitherto entertained, none more imperatively demanded impartial and deliberate investigation than the "croup-like inspiration of infants;" in the estimation of some distinguished medical authorities, an alarming and frequently fatal disease, requiring the prompt and decisive practice of free bleeding, "heroic" doses of calomel, and very slender diet;—in the opinion of others of equal eminence, a comparatively harmless, though tedious, complaint, rather aggravated than relieved by the treatment adverted to, and requiring for its cure the totally opposite practice of a tonic regimen, quinine, nourishing food, and country air. The very existence, indeed, of the disease, as separate and distinct from croup, has been a source of much dispute on the continent; and even here (constantly as we have opportunities of observing it,) it is not seldom mistaken for true croup by the inexperienced, and treated accordingly. Dr. Ley, therefore, is certainly not amenable to the charge of writing a book upon either an uninteresting or an exhausted subject.

As we are very desirous of taking as ample notice as possible of his opinions, we shall pass over the curious literary history of the "Laryngismus Stridulus" very briefly. It has been stated by different writers that this disease has but little attracted the notice of the profession. It appeared, however, to our author extremely improbable that a complaint dependent upon the physical agency of causes which have been always in operation, should have escaped the notice of practical medical writers; and, although it is true that the late Dr. John Clarke first fixed the attention of the profession to the subject, Dr. L. found, as he anticipated, that even from the earliest ages distinct notices of it were to be met with in medical works. The causes and intimate nature of this complaint, and the appropriate name whereby it should be designated, have been fruitful sources of contrary opinions; but the account of its cha-

racteristic features has been so uniform, that we are enabled at once to identify the disease as described by different writers under different titles. Until the beginning of the present century, this complaint appears to have been commonly described by the vague title of "asthma." In 1761, Dr. James Simpson published an inaugural dissertation, "*de Asthmate Infantum Spasmodico*." Dr. John Millar\* noticed this disease in a separate publication, which has been the source of great controversy in this and other countries. He had seen much of the disease, and identifies it with that described by Simpson, whom he quotes. Dr. Ley finds little difficulty in recognizing, at least in the first stage of Millar's asthma, the complaint which Dr. J. Clarke termed "a peculiar species of convulsion in infant children." In the same year with Millar's book appeared, in the *Philadelphia Gazette*, Rush's brief account of this disease.† Underwood‡ briefly notices it; and Dr. Ley refers to Wichmann, as having given the best account of it of any foreign writer. Of late years this complaint has become more generally known, and many cases of it have been related in the medical journals. Dr. Ley refers particularly to the cases by Mr. Pretty;§ one by Dr. H. Davies,|| who records the dissection of a fatal case; and the observations of Mr. North, afterwards collected and remodelled in his work on the *Convulsions of Infants*.¶

"The two former writers, however, have been perhaps somewhat precipitate in their adoption of the speculative views of Dr. Clarke, as to the dependence of this disease upon vascular congestion within the head; whilst the last, who, when he first communicated his sentiments to the public, had never seen it terminate unfavorably, denied the connexion altogether, and combated with much success the Herculean attacks too indiscriminately made at once upon the disease and upon the constitution. Mr. North has since, in his '*Observations*,' with the candour of an ingenuous mind, modified his first statement as to the universally slight character of this complaint. He acknowledges that it may be occasionally fatal, though much less so than has been generally believed; and he mentions one instance in which it destroyed the patient, and in which were discovered after death evidences of head affection; but he still denounces, in energetic terms, the heroic remedies so generally employed." (*Introduction*, p. xlviii.)

Gooch designated this disease by the term of "child crowing." Some interesting details respecting it were given by Mr. Hood, in the *Edinburgh Journal of Medical Science* for July, 1827. Dr. Marsh, in the *Dublin Hospital Reports*, vol. v., and Mr. Joy, in the *Cyclopædia of Practical Medicine*, have both contributed to our knowledge of the disease. In another part of the present

\* *Observations on the Asthma and Hooping-Cough*. 1769.

† *On the Spasmodic Asthma of Children*, by B. Rush, M.D. London, 1770.

‡ *On the Diseases of Children*. Edit. 6. Vol. i. p. 51.

§ *London Med. and Phys. Journal*, vol. iv.

|| *London Med. Repository*, vol. xviii.

¶ *Practical Observations on the Convulsions of Infants*, p. 258. 1826.

number, we give an account of the complaint as noticed by the German physicians, with their peculiar views as to its causes. (See Part III. *On Thymic Asthma.*)

*History of the Disease.* Few affections of infants are more calculated to excite the attention and fears of the friends and medical attendant than the sonorous inspiration of "crowing children." This distressing malady, always formidable in appearance, and occasionally fatal in reality, consists essentially of a constriction of the glottis, which impedes the passage of air into the chest, even in the mildest cases, and sometimes suspends altogether for a time the respiratory function. The child has an interruption, more or less perfect, of its breathing, and, after vehement struggles, it at length succeeds in drawing in its breath with a shrill sound, like the peculiar inspiration of croup and whooping-cough, and arising from the same cause, a temporary diminution of the area of the rima glottidis. These attacks are paroxysmal, and vary in their frequency, severity, and duration. At first the intervals are considerable; but, in the progress of the complaint, the attacks become so frequent that the child scarcely rallies from one before another commences. In its earlier stages the attack is often very slight, and speedily and spontaneously yields, and terminates in a fit of crying succeeded by refreshing sleep. As the disease advances it increases in violence, and becomes unyielding in its character. In the earlier periods of the complaint, the attacks generally take place in the night, or after tranquil sleep; but, when it is firmly established, and sometimes from the commencement, they come on in the day from trifling or from no apparent causes.

After commenting upon the various and generally inappropriate terms by which the disease is designated, Dr. Ley adopts, as the least obnoxious to objection, the name of "*Laryngismus Stridulus*," given to it by Mason Good. It points out at once the seat of the affection and the characteristic symptom. The shrill sonorous inspiration, so characteristic of the complaint, marks very unequivocally its seat. It is evident that there is an unusual approximation of the sides of the glottis, as in croup or whooping-cough, in which there is also a close approximation of the sides of the rima glottidis.

"Where the closure of this chink is not perfect, the child struggles for its breath, the respiration is hurried, the countenance generally bluish or livid, the eyes staring, and each inspiration is attended with a crowing noise; where it is more complete, and this state at the commencement of the paroxysm, according to my observation, is much more frequent, the function of respiration is entirely suspended for a while, there is an effectual obstacle to the admission of air, the child makes vehement struggles, by some termed convulsive, to recover its breath; at varied intervals, from a few seconds up to a minute, or, upon some occasions, nearly two minutes, air is at length admitted through the glottis, now partially open,

and this rush of air passing through a very narrow chink produces the peculiar sound. To these symptoms not unfrequently succeed a fit of coughing or crying, which terminates the scene; or, if the glottis be not even thus partially open, the child at the end of from two to three minutes, at the utmost, will die of asphyxia; pallid and exhausted, it falls lifeless upon the nurse's arm, and it is then that the child is generally said to have died in a fit." (P. 11.)

During the violent struggles for the recovery of the breath, all the muscles supplied by the respiratory system of nerves are thrown into violent action. The face is pale and cadaverous, and the external veins are turgid with highly carbonized blood. When the attack terminates fatally, it is not uncommon, immediately before death, to meet with true but generally slight convulsions. The peculiar contraction of the flexors of the thumb, fingers, wrists, ankles, and toes, is deemed by many writers an important, if not essential, mark of the disease. Dr. Ley thinks the frequency of this symptom has been over-rated by Clarke, North, and Marsh; he doubts, too, its convulsive nature, and regards these contractions as more nearly allied to feebleness of the extensors than spasmodic contraction of the flexors. This idea is opposed to the general opinion, but we have no doubt Dr. L.'s view of the subject is well founded.

"Another symptom which has escaped the notice of the greater number of writers upon this disease, but has not been overlooked by Mr. North, is the sound of mucus in the trachea. 'When the child wakes from its sleep, the breathing is for some moments unusually accelerated, and is accompanied by that kind of noise which an increased secretion of mucus in the air passages would produce.' This symptom is rarely entirely absent, but is particularly apt to occur either just before or for some time after a paroxysm. In other cases, however, I have known this symptom amongst the most prominent phenomena of the disease; lasting for weeks, sometimes with little interruption even for months, and attended from time to time by cough, so like hooping cough, as to deceive the most experienced. It is this symptom, indeed, which has led to the disease being confounded with the more severe forms of catarrh with increased secretion; and were it not for the freedom of the lining membrane of the fauces, nares, and frontal sinuses, from inflammation, would almost justify the terms 'catarrhe suffocant,' and 'catarrhus suffocativus,' by which this complaint has been known to some." (P. 15.)

Most writers are agreed in considering that there is a natural association of this disease with convulsions; but it may exist simple and uncombined, as described by Dr. Marsh and by Dr. Ley. The occasional association of this disease with the carpo-pedal contraction and general convulsions, led Dr. Clarke to consider that it was essentially connected with cerebral congestion and pressure; "but this opinion requires confirmation." Dr. Ley was at first inclined to yield to the high authority of Dr. Clarke, but more extensive and accurate observation led him to doubt, and



ultimately to disbelieve, that such connexion is invariable or even general. He has been able to trace little in the symptoms of the disease, in the influence of remedies, or in the appearances upon dissection, to countenance, much less to establish, such relation. This is, in our opinion, a very important point. We are sure, from abundant observation, that Dr. Ley's experience has led him to a correct conclusion, and we are equally convinced of the mischief very often inflicted by those who pertinaciously adhere to, and who shape their practice by, the creed of Dr. Clarke.\* Dr. Ley does not deny that the two maladies *occasionally* coexist.

*Causes of the Disease.—Age.* All writers agree in regarding this disease as one of infancy and childhood. Even those who allow the greatest latitude restrict it to within the ages of twelve or thirteen years; the most accurate observers confine its appearance to much more narrow limits. Professor Hamilton describes it "as peculiar to the age of cutting the deciduous teeth." Dr. Ley has seen it in one instance at four or five years of age, and in a second at six or seven;† but the great majority of cases unquestionably occur before the completion of the first dentition." This quite accords with our own experience; and we also agree with Dr. Ley, "that its all but exclusive appearance before the age of twelve or thirteen is probably to be referred to the size of the larynx at that time."

*Constitution.* A constitutional tendency to this complaint may occasionally be traced in whole families. Mr. Pretty states that three children of his own, and three in the family of a patient, were attacked in succession. Mr. North mentions an instance in which three children in the family were successively attacked, and Dr. H. Davies announces it as a general truth. Dr. Ley's experience amply confirms these statements, and we have recently had striking proofs of their accuracy.

*Climate and Season.* The disease, says Dr. Ley, is much under the influence of climate and season. In dry, elevated situations, and warm climates, it is little known; and hence the scanty information and erroneous views entertained respecting it by many of the German and some French writers, who frequently pronounce for the identity of a disease of which they know little or nothing, the asthma of Millar, with another with which they are very familiar, croup.† But, in the south and damper parts of France, the asthma of infants is well known, and is described by Baumes‡ as the "catarrhe suffocant nerveux."

\* Dr. Merriman states, (edition of Underwood, p. 139,) "In two cases of the kind, the children died in the fits. They were both opened by Mr. Sweatman, a very skilful anatomist, but not the slightest appearance of cerebral affection could be discovered in either of them. The principal deranged structure discovered was a collection of small glandular swellings in the neck pressing upon the par vagum."

† Vide Albersii Comment. de Tracheitide infantum, vulgo Croup vocata, p. 50; and also J. C. Albersii Comment. de Diagnosi Asthmatis Millari. Göttingæ, 1817.

‡ Des Convulsions dans l'Enfance. 1789. P. 365.

"It is probably to the change in the American climate, in consequence of the inhabited parts of that country being more cleared of its forests of timber, and its greater immunity, therefore, from diseases the result of fogs and damps emanating from the decay of vegetable matters, that the earlier American writers speak with so much confidence of this disease, whilst now they doubt its very existence; and this also probably accounts for the changes of opinion which Rush successively adopted in the intervals betwixt the publication of his letter to Millar in 1770, the publication of his first edition of *Inquiries and Observations* in 1794, and that of the second edition in 1805, with regard to this disease and its relation to croup." (P. 56.)

The constitutional tendency thus engendered by damp situations and seasons, is much aggravated by sudden vicissitudes of temperature; and hence the frequency of the disease in this country. The knowledge of this fact leads Dr. Ley to offer a few very proper remarks upon nurseries, which are generally but ill protected against such sudden alternations.

*Diet.* Indiscretions in diet notoriously aggravate the disposition to this disease.

*Scrofula.* Dr. Ley is inclined to believe that the causes just mentioned predispose to the disease, by establishing a disposition to scrofula.

"The similarity and even sameness of the circumstances which thus increase the tendency, at once, to the constriction of the glottis in infants and to scrofula, the great characteristic of which is glandular enlargement, would render it highly probable that there was some essential connexion between the two, even if there were no more direct and conclusive evidence upon the subject." (P. 59.)

Facts are given in support of this opinion.

*Exciting Causes.—Dentition.* The most judicious writers upon this disease concur in the assertion that it has much to do with the process of teething. The observation of Cruikshank, that the glands of the absorbents of the neck frequently "swell in children from inflammation of the gums and alveolar processes in teething, and recover after the teething is over," might have led to the suspicion that such swelling of the glands constitutes an intermediate link in the chain of events; and the experience and observation of Dr. Ley, and of others since the promulgation of his original views, confirm the suspicion. "Scarcely an instance has occurred to me, since my attention has been very strongly directed to the subject, in which there has not been the strongest foundation for the belief that either the glandulæ concatenatæ of the neck or the thoracic absorbent glands have become morbidly enlarged." Instructed by Dr. Ley, we have also paid particular attention to the subject, and, in confirmation of his statement, we may observe that, in one family, three children were attacked with this disease. In each the glands of the neck were enlarged, and in each the symptoms of the disease subsided as the glandular affection was

removed by change of air and appropriate treatment. Dentition is analogous in its influence to that of any other cause of local irritation, common or specific, upon glands situated in the course of those lymphatics which lead from the part excited to the venous circulation in which they terminate.

"The inflammation of the gums, or alveolar processes, or enveloping membrane of the teeth, may produce morbid excitement of those glands in the neck, through which the lymphatic vessels from the teeth and gums are passing to their ultimate destination, and cause their enlargement even in the absence of all strumous taint; but still more certainly if such taint exist. This explains the fact noticed by Hamilton, that the complaint has 'appeared in the most robust as well as the most delicate infants,' and the statement of Etmüller, that it is a complaint of children 'plus minuscule robustorum.'" (P. 62.)

*Inflamed and Ulcerated Scalp*, which is common in children from various causes, is generally attended with enlargement of the absorbent glands of the neck, and hence, again, may arise the croupy inspiration. Dr. Ley observes, that "the connexion of the inflamed and ulcerated scalp and enlarged glands has been rarely noticed, although it has not altogether escaped observation." We hope, and are inclined to believe, that he here under-rates the attention of practitioners to a very common chain of events. We apprehend that every medical practitioner, of even but moderate experience, is perfectly aware of the fact that in such instances there is almost always more or less glandular enlargement. It is a popular and even a professional opinion, that the sudden disappearance of eruptive ailments produces convulsions and other ailments in children, from the repulsion of acrid matter, rather than from the irritation of existing eruptions. This we have long doubted, and so has Dr. Ley, who has been, we believe, very correctly informed by Mr. Kelson, that reiterated experience had convinced him that, where convulsions were associated with such complaints, they were the result, and commonly in proportion to the extent, of the local excitement; that they had no reference whatever to the retrocession or repulsion of these eruptions; that they ceased as these appeared less angry or disappeared; and that, in such cases, the best mode of obviating the occurrence of convulsions, or other serious ailment, was to cure the eruption as speedily as possible. To this opinion we, with Dr. Ley, perfectly assent, "with a modification of the statement founded upon the necessity of attending to any internal cause, of which the eruption and the convulsions may have been the compound result, and of establishing some vicarious discharge, especially by the bowels, where the constitution has been long accustomed to the drain from an extensive surface, whether from the discharge of *tinea capitis*, *crusta lactea*, or excoriation behind the ears." As we know this is to a certain extent opposing a very popular impression

and prejudice, we may observe that it is supported by the valuable authority of Bateman and Dewees. The latter\* gives a caution, also given by Dr. Ley, that the diet should be restricted, and aperients administered, when the drain is suppressed. We know that the general, and as we believe imaginary, fears of the suppression of eruptive diseases in children, often reduces the practitioner to a mere spectator of a long-continued, and at least disagreeable and unsightly, malady, when he would, if he were released from the trammels of prejudice, adopt an active and efficient practice. In two cases detailed by Dr. Ley, it appears that the excitement arising from excoriations and acrid discharge behind the ears produced no "crowing" till glandular enlargement took place. When the crowing was violent, the increase of size of the glandulæ concatenatæ could be distinctly traced throughout their whole course: as by proper treatment their enlargement subsided, so did the functional derangement of the glottis.

"But the glands required some little time after the disappearance of the eruption completely to resume their original form and size, and, during this interval, a remnant, as it were, of the symptoms remained. It is upon the same principle that I would explain the fact, noticed by Mr. North, which has abundant foundation in fact, that, when this complaint arises from painful dentition, 'the symptoms do not vanish instantaneously, as if by magic, the moment a tooth starts through the gum. They pass off gradually.' In other words, after the gum and enveloping membrane of the tooth have been relieved from swelling and inflammation by the free use of the gum lance, some time is still requisite for the irritation and tumid state of the cervical glands to subside." (P. 64.)

*Head Affection.* Dr. Ley, aware of the practical mischief that has arisen from too readily adopting the opinions of Dr. John Clarke, or rather from pushing these opinions further than that very distinguished writer probably ever intended, argues this topic at much length, and very ably. Various practical authorities are referred to, in confirmation of the author's belief that, although vascular excitement of an inflammatory character within the cranium may occasionally produce the crowing inspiration, the weight of testimony is decidedly adverse to the conclusion that such relation is frequent, or that it is direct. "The pathological condition within the cranium may be the cause of the convulsions, and in some instances of the death of the child; but the breathlessness and crowing are the consequence of the enlargement of the glands."

"The head affection may be prior, and produce, by remote and indirect consequence, the laryngeal complaint; they may occur together, as mere coincidences, without any other association than the existence of a constitutional malady, which may be the common cause of both; the cerebral disturbance, again, may be the consequence of the frequent attacks

\* On Children. Philadelphia, 1825. P. 316.

of breathlessness, almost amounting to asphyxia, which, by impeding the flow of blood through the lungs, causes accumulation within the cavities of the heart, and, subsequently, venous congestion within the cranium; and this may be followed by effusion of serum into the ventricles or between the membranes of the brain, and, occasionally and remotely, by inflammation and its ordinary consequences." (P. 81.)

Upon some occasions, Dr. Ley has had strong reason to suspect that simple bronchitis and disease of the lungs has, by contiguous irritation, caused enlargement of the bronchial glands, and thus rendered the original disease more intractable, and occasioned the crowing inspiration.

*Causes of the Paroxysm.* The symptoms of this disease are not constant: they recur at varied intervals, the intermissions being complete;

—"and the various other causes, which authors have enumerated amongst the occasional causes, are just such as excite the paroxysms. In considering these, I shall first notice those which are enumerated by other writers, and principally in the order in which they have noticed them, that it may not be imputed to me that I have allowed my observations to be warped by any preconception, which might be suspected to originate in the peculiarity of my views with respect to this malady." (P. 85.)

After mentioning the causes, of most frequent operation, enumerated by the best authorities, and which are apt to produce the paroxysms, Dr. Ley states that his own experience amply confirms the majority of the facts upon the subject which these writers have adduced: but, he continues,

"No one, however, as far as I know, has traced the mode of connexion of the predisposing and exciting causes of the disease with the phenomena which present themselves in its course; authors generally contenting themselves with alleging that it is a convulsive disease; that it arises from a variety of remote causes; and some, more minute, if not more accurate, in their speculations, referring it to an affection of the head, without, however, even an attempt to explain how it happens that this affection of the head should thus select one set of fibres, connected with this complicated chink, to the exclusion of all the others, although they all are close to each other, and derive their nervous influence from one common trunk." (P. 102.)

It results from the examination

—"that the causes of the paroxysm are such, as, by natural association without morbid influence, involuntarily close the glottis; that the breathlessness, which commonly precedes the sonorous inspiration, cannot, therefore, be from this closing of the rima glottidis, which, in such cases, is perfectly normal, but must arise from defective power in those agents, whose office it is to open that chink; and, lastly, that the crowing inspiration, which is nature's imperfect cure of the temporary suspension of breathing, arises from the chink being only partially open for the admission of air, and remaining so until some explosive expiration, such as

screaming, crying, coughing, or belching, shall mechanically burst open the flood-gates, and perfect the recovery from the paroxysm." (P. 103.)

We have no doubt that Dr. Ley's claim to originality is perfectly well founded. For many years we have sought in vain for information upon the subject in the works of English and foreign writers, and have only found speculative opinions offered to explain the phenomena of this disease. We shall find ample reason, as we proceed, to come to the conclusion that Dr. Ley's views rest upon a much more solid basis.

*Pathology of the Disease.* Dr. Ley dedicates fifty pages of the work to the discussion of this part of the subject, and, as far as we know, the whole train of investigation, as well as the very important and well-ascertained results that flow from it, are entirely original. By nearly all commentators on this disease it has been believed that the temporary suspension of the breathing from a complete closing of the glottis, as well as the subsequent crowing inspiration from its imperfect opening, must have been the result, not of absolute or relative want of power in the opening muscles, but of excessive or anormal contraction of those which close the glottis. Hence the addition to its genuine name by a large majority of writers upon this complaint, of some adjunct or epithet which involves the postulate of its convulsive character. Dr. Ley very impartially examines the arguments that have been adduced to establish the convulsive character of this malady, and, among others, he very fairly criticises and corrects certain opinions that we entertained in common with others upon the subject, until taught better by his arguments and *facts*; and he succeeds in showing very clearly "that there is no sufficient evidence of the spasmodic character of the laryngismus stridulus."—"It may be, therefore, that the glottis is closed by the usual exertion of natural agents in the performance of some of the most ordinary functions, as swallowing, &c.; and it may be, that it remains partially or totally closed from some want of vigour in those antagonist powers which should again efficiently open that chink for the purposes of respiration; and to these conclusions an investigation of the remote causes, and their mode of operation, has already led me." Adopting, in the early part of his life, but never satisfied with, the current pathology of the disease, Dr. Ley was led to make minute and exact enquiries as to the class of constitution most liable to it,—of which the strumous is, beyond all comparison, the most frequent,—as well as into the causes which directly produced it. He found that the complaint arose from causes differing in situation and in essence; and he was driven, for the purpose of obtaining a more satisfactory explanation, to seek for some intermediate link in the chain of events common to them all, and of general, if not universal, occurrence, in combination with the laryngeal affection to which the symptom might be referred.

"The result of this inquiry has been to establish in my mind the conviction, that such common link, be the remote cause of this very peculiar symptom what it may, will, in the immense numerical majority of instances, be found to be enlargement of the thoracic or cervical absorbent glands. All the principal causes of the disease, as contradistinguished from the causes of the paroxysms, are capable of producing such enlargement, and experience confirms what a very general pathological connexion might have suggested; for I have found the relation between such enlargement and the crowing, when it has occurred, all but universal, and proved by observation during the life of the patient, or the examination of the body in fatal cases; and even in the very few instances in which it may have been difficult to detect the glandular affection, in consequence of the change of form in these glands from the compression of superjacent textures, or from their being within the thorax, the occurrence of similar symptoms might justify more than suspicion of its existence. 'Une maladie ne peut dépendre que d'une espèce de lésion.'" (P. 113.)

But how happens it that this fact has been so long overlooked? In the first place, the disease is "not commonly" fatal; secondly, examinations after death are generally carelessly conducted: those organs alone are examined which were previously suspected to have been in fault; and, thirdly, the very frequency and notoriety of enlarged bronchial or cervical absorbent glands has prevented them from being particularly noticed.

"But it is not enough thus to have traced such connexion: it is requisite that I should point out what is the nature of the relation which these two occurrences bear to each other,—to associate; in fact, the symptoms as the effect, with the pathological condition as their cause." (P. 114.)

This subject involves the results of minute anatomical research, physiological experiments, and pathological enquiries, and verifies the observation of Sir Charles Bell, that "it is the knowledge of the nerves of respiration distributed on the neck, throat, and thorax, that will enlighten the physician in distinguishing the symptoms of disease." The two clusters or chains of glands, subject, from a variety of causes, during infancy and childhood, to induration and enlargement, are in the immediate vicinity of organs of vital importance in the animal economy, and can scarcely fail, when enlarged, to exercise a pernicious influence upon parts with which they are then in contact. In children, absorbent glands are rarely sufficiently enlarged to encroach upon the area of the trachea, or much to interfere with the circulation of the blood; but they occasionally obstruct lymphatics in their course, and may impair materially the function of neighbouring nerves.\* After arguing upon and satisfactorily establishing these points, Dr. Ley comes with apparent necessity to the conclusion that the phae-

\* In the Med.-Chir. Notes and Illustrations, Part I., by Mr. Fletcher, of Gloucester, the student will find many very interesting cases of "Spasm of the Glottis" from various causes.—REV.

nomena of the disease must be accounted for by some influence which the enlarged glands exercise upon the respiratory nerves. In the Appendix, abundant and extremely interesting proofs are given that nerves may be affected in this manner. If there be much enlargement of the glands situated at the root of the lungs before and behind the bronchi, blending with others upon the arch of the aorta, not unfrequently between the origin of the carotids, and which are but continuations of those which follow the course of the trachea downwards, it is highly probable that the recurrent nerve, at its origin, may be subjected to their injurious influence, seeing that this nerve, upon the right side, turns round the subclavian artery, as it emerges from the innominata, behind which the nerve passes close to the origin of the carotid upon that side; whilst the left recurrent winds round the arch itself of the aorta, generally between the carotid and subclavian arteries, upon and about which these glands are situated. If, too, the deeper-seated chain of cervical glands are enlarged, they may affect the recurrent in its course; for they lie in the cellular tissue, which forms a cushion to that nerve. And now the curious and interesting question arises,—what would be the precise effect of such injurious influence, or positive pressure, upon the recurrent? This topic Dr. Ley argues at much length; briefly in the body of the work, but elaborately in the Appendix, where the reader will find the details upon which his statements rest, and may hence determine how far his inference is justified, that this disease, the spasmodic character of which has been conceded without examination, *is more allied to paralysis than to convulsive movement*. We regret that we cannot enter into the very interesting facts which Dr. Ley adduces in proof of this original position. We are satisfied that he has established it, and freely admit the instructive lesson we have received from him.

“This may appear a startling proposition to those whose habitual train of thought and mode of expression have referred to spasm as constituting the essence of this disease. But the prejudices of early education and impressions are not easy to eradicate; and belief, founded upon the presumed infallibility of the teachers whom we revere and the authorities which we respect, is apt to take irresistible hold of the mind, which yields to the seductions of indolence. It was long, therefore, before conviction was forced upon me by the reiterated cases which, since my attention has been more strongly directed to the subject, have presented themselves to my notice; and it may be probably the same with others. I thought ‘*more majorum*’ that there was spasm from excess of nervous energy. The symptoms, however, if minutely examined, are not those of excitement of either the par vagum, or the recurrents; but they bear a striking analogy to those, which the experiments of physiologists have proved to be the result of an annihilation of the powers and attributes of those nerves, as where they have been tied or divided, or where a portion of them has been excised. When these respiratory nerves are excited,



either by mechanical irritation with a pointed instrument, as in an experiment of Cruveilhier, or by inflammation in conformity with the pathological observations of Breschet, Autenrieth, and Gendrin, and as occurred in an interesting case recorded by Sir Astley Cooper, violent paroxysmal cough, like whooping-cough, has been, I believe, universally the result; but there are no attacks of breathlessness, amounting almost to asphyxia, as occur in this complaint. The other symptoms, also, show in this malady a state of paralysis in the other parts supplied from the same common trunk. So the transverse fibres, behind and connecting the rings of the trachea, losing their contractile power, the sputa accumulate in the air passages; hence the 'prodigious rattling in the upper part of the aspera arteria, resembling that sound which attends where there is phlegm that cannot be got up, scarce sensible when they are awake, but very great when they are asleep,' described by Dr. Molloy,—that kind of noise which an increased secretion of the mucus in the air passages would produce,' noticed by Mr. North." (P. 124.)

Continuing the argument, which he fortifies on every side, Dr. Ley contends that, even if it were conceded that these glands acted by exciting these nerves, it would not only not explain, but would be inconsistent with the facts. "Excitement of these nerves would cause contraction of the muscles upon which the nerves are distributed; but this contraction would open the glottis, not close it; for the recurrents endow the opening, not the closing, muscles with contractile power." But the approximation of the sides of the glottis, thus produced by defective power of the opening muscles, may be either complete or partial. If complete, the child may be carried off by convulsion, or by asphyxia without convulsion. More commonly, however, the glottis becoming gradually but partially open, air rushes through the still contracted aperture, producing the sonorous inspiration so characteristic of this disease; and this commonly announces the partial recovery of the child. It is admitted that the laryngismus stridulus may occasionally depend upon a spasmodic affection of the closing muscles of the glottis;

—"but the general history of the predisposing and occasional causes of the disease, the exciting causes of the paroxysms, and the appearances upon dissection, all point to the conclusions, that such is rarely the case, and that an immense numerical majority of instances of this complaint are the result of a paralytic affection of the recurrent laryngeal nerves, produced by the compression of enlarged and indurated glands in their course." (P. 133.)

Several, and some very plausible objections may be brought forward against these novel views of Dr. Ley's. He investigates those that have yet been made, and alludes to others likely to be adduced; and he succeeds, in our opinion, in satisfactorily showing that the objections to his doctrine are more apparent than real. That the laryngismus stridulus of infants is very frequently mistaken by the public, and not seldom by medical practitioners, for other diseases, some of which more or less resemble and are ana-

logous to it, and others from which it essentially differs, must be a well-known fact to all who are much consulted upon such subjects. The diagnosis of the disease is therefore an important topic, and, in the twenty pages Dr. Ley has devoted to its consideration, he clearly points out the distinction between it and other maladies with which it is so often confounded by the careless or inexperienced.

The *prognosis* in this disease has been a fertile source of variety of opinion.

"Simpson, Hamilton, Clarke, and Gervino consider it as a complaint which very materially implicates the safety of the patient; North, on the contrary, thinks<sup>2</sup> it rarely fatal; whilst Millar, Rush, Underwood, Merriman, and Marsh, allege that it will generally yield to proper remedies. The means, however, recommended by Millar, Rush, and Underwood, although they resemble each other, differ from those suggested by Merriman; these, again, vary from the remedies advocated by Marsh; and Clarke adopts a practice different from each, and discountenanced by all." (P. 177.)

Dr. Ley's impression is, that, if this disease be treated early, and before the balance of circulation within the head has been much disturbed, that recovery may be expected in the majority of instances; and that those children have a much better chance of escaping who are not subjected to any severe discipline, than those who, in compliance with the prevailing doctrine with regard to this complaint, have been freely bled, had large doses of calomel, and such other remedies as the supposition of the invariable dependence of the disease upon cerebral turgescence or excitement has suggested. This doctrine we have always maintained, and more extended observation still further convinces us of its accuracy: and we must be allowed to express our surprise that, in spite of the host of facts arranged against it, the bleeding and heroic doses of calomel treatment is pertinaciously adhered to, from the unfounded apprehension that hydrocephalus must result from it, if this "protective" plan be not boldly enforced.

"The prognosis in individual cases of this disease is principally founded upon the age of the child, upon the frequency and severity of the attacks, upon the degree to which the glands are enlarged, upon the situation and cause of such enlargement, upon the extent to which the venous circulation within, or in its course from the head, is interrupted, and upon the existence or non-existence of the most formidable of all its combinations, that of arterial excitement and its consequences, including inflammation, serous effusion, and thickening of the membranes of the brain." (P. 180.)

*Treatment.* We perfectly agree with Dr. Ley, that the conclusions to which he leads us with regard to the nature of the disease are calculated to clear up much of the uncertainty and obscurity which has hitherto prevailed as to its treatment.\* The primary

\* Dr. Ley refers in a note to the evidence he has received, since the foregoing pages were printed, from different respectable practitioners whom he names, in confirmation of his pathological views of this disease.

object must be to ascertain if any of the glands so frequently alluded to are enlarged; to trace the cause of such enlargement, and to adapt our remedial measures to the cause. We must not infer the non-existence of glandular enlargements because we cannot detect them during life. Tumid glands even in the neck may escape detection; if within the thorax, they are not to be detected. "But, as similar diseased conditions commonly produce the same or similar results, we infer from the occurrence of the latter the existence of the former." But the pathological condition of these glands only establishes the liability to the attacks. The paroxysms generally require for their production the intermediate agency of some other event, which is to be considered as their exciting cause. It is therefore a second, but important, point in the treatment, to distinguish, and to prevent or to counteract, the operation of these causes of the paroxysms.

"As, moreover, the attack has been in some instances suddenly fatal by producing suffocation, the patient can never be considered as quite free from hazard, and it is necessary, therefore, so to treat each paroxysm as to shorten as much as possible its duration. This more particularly requires attention in those instances in which the breathing is completely suspended, for the restoration of which it is sufficient to procure, if practicable, even that imperfect inspiration which the crowing sound implies; for by this is insured, at least, the temporary safety of the child." (P. 194.)

The disposition to this disease is often a family peculiarity, but occasionally it is generated by the untoward agency of external circumstances, over which we have more or less control. Thus, in dry and elevated though cold situations, it is not frequent: the contrary obtains in low marshy situations. It is more frequent in crowded cities and large manufacturing towns than in the country. It is more prevalent in winter and spring than in summer or autumn. The admitted accuracy of these facts suggests appropriate care on the part of the friends, and appropriate counsel on the part of the practitioner, as far as climate, situation, and season, are concerned. "Warm clothing, too, is all important." Upon this subject Dr. Ley offers several remarks, which are not merely valuable in reference to the disease under consideration. We have often occasion to lament the folly and pertinacity with which children are exposed, half-naked in fact, but in perfectly fashionable attire, to our ever-varying climate. This is popularly called "hardening" the child. We regard it rather as an experiment to ascertain how much a child can bear without positive injury to its health. The mischiefs that hence arise are, unfortunately perhaps, not generally of immediate occurrence. If they were, the custom would, we suppose, be speedily abandoned: but, in spite of the "hardening" system, a delicate child does not "get on," and sooner or later scrofula appears in some of its forms, especially if there be any hereditary tendency to this, so called, and real "evil." It is very perti-

nently remarked, that, in dry and temperate weather, children ought not to be debarred from exercise in the open air, even if they have the mucous *râle* so frequently observed in this disease. There is no inflammation of the air-passages to be aggravated. In the ordinary language, there is merely an increased secretion of mucus; but Dr. Ley regards the symptom as dependent "upon accumulation of the ordinary secretion of the part in consequence of defective powers of the expelling apparatus, which is either enfeebled or paralysed; and upon this condition, weather has little other effect than as it has a tendency to enlarge or diminish the glandular tumours, upon the indirect influence of which that accumulation depends." The warm or tepid bath is a valuable auxiliary in the medical treatment; but let the practitioner remember that, if the child is frightened at the water, and cries or struggles violently, it ought not to be employed; for a paroxysm of the disease may thus be very probably produced. Cold bathing is objected to, and wisely, in this complaint. The *diet* of the child is of the utmost importance: it should, if possible, be confined to nature's food, the breast-milk, during the ordinary period of suckling. "The chances of preserving children who have a family proneness to this complaint will be exceedingly small if it be attempted to bring them up by hand." We know this to be correct: but insuperable difficulties may arise to prevent the child from being suckled. Here we must carefully regulate the quality and quantity of the child's food, and control, as well as we can, the prejudices of nurses. Asses' milk approaches nearest to the food provided by nature. If cows' milk is used, it should be diluted with about two-thirds of sweetened gruel. The grit or barley gruel, prepared barley, and farinaceous food, are more aperient than arrowroot, biscuit powder, flour, or rice. If, therefore, there be any tendency to constipation, the food should be selected from the former; if to diarrhœa, from the latter. Care must be taken, too, that the child is not too frequently fed, even upon proper food. The sucking bottle, with an artificial teat, is the best substitute for the breast. The earliest signs of disorder of the stomach and bowels demand attention, and it must be removed by appropriate change of food and proper medicines. Dr. Ley does not pretend to provide a remedy for scrofula; but, as a strumous taint has so much influence in producing the disease, he touches at some length upon the general management of children thus predisposed to it. Iodine may be employed with fair prospect of advantage in the cure of scrofulous tumours, and Dr. Ley's confidence in the doctrines he has advanced respecting the constriction of the glottis in children is much strengthened by the fact, that the two great remedies relied upon by Dr. Merriman are soda and burnt sponge, combined with aperients; though, from the obscurity which has hitherto hung over the pathology of this disease, Dr. M. had some difficulty in explaining their beneficial agency.

"Iodine or its salts may be employed both externally and internally.

The neck and upper part of the sternum may be rubbed twice daily with any simple unguent containing about one eighth of the hydriodate of potass, whilst for administration internally the solution of the hydriodate of potass, according to Magendie's formulary, constitutes as good a form as can be selected." (P. 232.)

*Dentition.* The most frequent local irritation that causes the disease is painful or difficult dentition, and here all writers strongly advise lancing the gums; and care must be taken that this little but important operation is efficiently performed. The gum, together with the membranous covering of the teeth, must be freely divided: the instrument should be felt to grate upon the tooth.

*Head Affection.* It is admitted that this complaint has occasionally an intimate connexion with morbid excitement within the cranium; and this relation may be one either of cause, coincidence, or consequence. The medical attendant, then, must be upon his guard, and appropriately modify his treatment to avert the threatened danger. In Dr. Ley he will find an excellent practical guide, who very carefully limits the extent to which debilitating measures can be safely carried in this complaint. If, after having subdued the convulsions, which are the great evidence of hydrocephalic excitement, the glands remain enlarged, and the "crowing" continues, "*pure country air* will do more to remove this secondary ailment than any remedies with which I am acquainted." For Dr. Ley's comments on the causes and treatment of the paroxysms we must refer to the work itself.

The Appendix, on the "Pathology of the Nerves," occupies nearly two hundred pages; and this we shall notice at a future opportunity. Its object is to establish the truth of those general principles connected with the pathology of nerves, which in the Essay Dr. Ley thought himself justified in propounding, and the truth of which further and more extensive enquiries have tended to establish and illustrate.

Every page of the work affords proof of the uncommon industry with which Dr. Ley has investigated the subject in all its bearings; and, in our opinion, the original views he entertains of the pathology of "*Laryngismus Stridulus*," which he derives from his own experience, and which he confirms at every point by references to various facts, physiological as well as pathological, contained in the numerous writers he has consulted, are perfectly correct. To these views we yield our perfect assent, not because we readily "catch at novelties," but because conviction is forced upon our minds. If we were disposed to be hypercritical, we might observe that occasional repetitions unnecessarily increase the size of the work, and that it would have been better to publish the Appendix in a separate form. By its length, the volume is of course rendered much more expensive, and thus we fear may spread less extensively among practitioners, who, without any exaggeration of its merits, will lose a very important and necessary lesson if they do not possess it.

## ART. VI.

*A Treatise on the more obscure Affections of the Brain, on which the Nature and successful Treatment of many Chronic Diseases depend. Being the Gulstonian Lectures, delivered at the College of Physicians, in May, 1835. By A. P. W. PHILIP, M.D., F.R.S.L. & E. Fellow of the Royal Colleges of Physicians of London and Edinburgh, &c.—London, 1835. Pp. 140.*

THE influence of the nervous system on the functions of other parts has been a subject of enquiry since the earliest period of anatomical research. The path of this enquiry has been beset with many difficulties, some of them necessarily connected with the nature of the subject, and others arising from the faultiness of the method employed in the investigation. Amongst the former may be classed the intricacy and minuteness of structure of the different parts of the nervous system, and the peculiarity of its functions; the faultiness of method consists chiefly in the disposition which men have to generalize their knowledge, by extending to the explanation of new facts principles with which they are familiar, while they neglect to enquire whether the analogy between the new facts and those previously observed be so strict as to warrant such extension.

The mass of the nervous system, in the higher animals, consists in a great degree of cellular and vascular tissues; the nervous substance, properly so called, bearing a small proportion to the general volume. In a paper by Dr. Macartney, published in the third volume of the Transactions of the British Association, that eminent physiologist has shown that, not only in the nervous trunks, but even in the brain, the greater part of its volume is formed by an extremely fine and delicate membrane, which pervades all its parts, and gives a covering and support to the minutest portions of nervous substance which enter into the composition of that organ. Dr. Macartney believes that the nervous substance, if it could, in the living state, be separated from all the tissues with which it is ordinarily combined, would be altogether invisible; and illustrates this position by observing that, in the human eye, the pigment of the choroid is seen distinct and unchanged in colour through the retina, as through the transparent humours of the eye; the human retina affording, perhaps, the best example of nervous substance, little accompanied by accessory tissues. In the other parts of the frame, in the skin or mucous membrane, for instance, if we attempt to trace the nervous filaments to their origins in those parts, we soon reach a point beyond which we can no longer distinguish separate filaments, or portions of nervous substance, clothed by cellular membrane. The filaments, as far as we can trace them, appear to have a plexiform arrangement; but we have reason to believe that there is not a single point on the surfaces we have

mentioned which does not possess a portion of the nervous substance, and a mode of sensibility necessarily connected with its organization in that point. The nervous substance may be called the sentient substance, as being that tissue in which inheres the power of feeling the influence which various substances or circumstances are capable of exerting on the living structure. As there is no part in the living animal which does not possess a sensibility or mode of feeling of one kind or other, it is a legitimate conclusion that there is a universal diffusion of the nervous or sentient substance throughout all parts of the frame, certain organs possessing a greater proportion of it than others; and, as the modes of feeling of different parts are very various, there can be no doubt that the sentient power is modified, in different situations, by the manner and degree in which this substance is combined with other tissues. In the greater number of kinds of animals, and most distinguishably in the higher classes, are found filaments arising from all parts of their bodies, and which, combining into cords, or "nerves," proceed to combine themselves into masses, which, from their situation, have been called "central." This mode of arrangement it is which forms a nervous system; and it has for its end the influencing the state of each part, and of the individual, by the sensations of every other part, and also the production, in the central parts of the system, of certain qualities, between which and those of the other parts of the body there exists definite relations. In some animals of the lowest classes, a nervous system has not been discovered, and thence it has been inferred that these animals do not possess a nervous substance. But the inconclusiveness of this opinion appears from the consideration that the presence of a nervous substance implies that of a nervous system only in creatures possessing a number of distinct organs, and whose manner of existence requires that the sensations of those organs should be combined with each other; and from the fact that, in animals of the highest organization, the nervous substance is not distinguishable, in the simpler organs, from the tissues with which it is primarily combined. The nervous substance in the skin and mucous membranes of the human subject is not more easily recognized than in the body of a polypus; yet, that in those organs it exists in a state of continuous diffusion, there can be no doubt; and the perfect similarity of the functions of some of the lowest animals to those of certain organs in the highest,—the stomach and intestinal canal, for instance,—leads to the conclusion that the kind of organization which exists in the one exists also in the other. It is deserving of attention that, in the more highly organized animals, the nervous cords which conjoin the sentient extremities to the central masses of the nervous system form, on their passage, numerous connexions with each other, in some parts of the system assuming an intricate plexiform arrangement; while, in the lowest classes in which a nervous

system is found, these collateral junctions are either wanting or exist in a very limited degree, the nerves proceeding directly from their origins to the central parts.

In the work the title of which is prefixed to this article, Dr. Philip applies to the treatment of certain obscure affections of the brain, upon which he supposes that many chronic diseases depend, those physiological principles upon the elucidation of which he has bestowed so much pains in his well-known "*Experimental Enquiry into the Laws of the Vital Functions.*" The first two chapters of the four of which the Gulstonian Lectures consist are indeed little more than a repetition of that which Dr. Philip has already laid before the public eye so frequently, and in such a variety of forms; the title of the first chapter being "*On the state of our knowledge respecting the General Laws of the Animal Economy at the time my investigations were begun,*" and that of the second, "*The results of investigations respecting the General Laws of the Animal Economy.*"

In the former of these chapters, Dr. Philip considers the experiments and conclusions of M. Le Gallois; in the latter, he states the results of his own investigations, on which, he says, it appears to him, is founded the only correct view of the laws of our frame. From Le Gallois' experiments four principal conclusions had been drawn by that author, and by the committee appointed to report on his memoir. 1st. That the cause of all the motions of inspiration has its seat near that part of the medulla oblongata which gives rise to the nerves of the eighth pair. 2d. That the cause which animates each part of the body resides in the portion of spinal marrow from which the nerves of that part are derived. 3d. That, in like manner, it is from the spinal marrow that the heart derives its life and its powers; but from the whole spinal marrow, and not merely from any particular part of it. 4th. That the great sympathetic nerve takes its rise from the spinal marrow, and that the particular character of that nerve is to bring every part to which it is distributed under the immediate influence of the whole nervous power. On these conclusions of Le Gallois, Dr. Philip observes as follows:

"None of the experiments of M. Le Gallois, although at first view indicating that the spinal marrow possesses a power over the heart not possessed by the brain, when duly considered, afford this inference. . . . His experiments demonstrate that, when a stilette of nearly the same diameter with the cavity of the spine is forcibly passed into it, . . . acting with such power on the spinal marrow as suddenly to destroy its mechanism, the power of the heart is instantly so impaired as to be incapable of maintaining the circulation: . . . on the other hand, . . . the brain may be wholly removed without at all influencing the power of that organ. . . . It is not, on the one hand, a fair inference that, because the power of the heart was nearly destroyed by the injury done to the spinal marrow, it derives its power from that organ; because



its power being derived from some other source, might be influenced by affections of the spinal marrow; nor, on the other hand, that the power of the heart being unimpaired by the removal of the brain affords any proof that its power may not be influenced by the brain while their nervous connexions remain. It was only necessary to reverse the circumstances of the experiment, in order to show the inaccuracy of the inferences of M. Le Gallois and the committee. This was done, . . . the spinal marrow was removed, and the brain crushed. The result also was thus reversed. In the former case, the power of the heart remained unaffected; in the latter, it was as much impaired as by the destruction of the spinal marrow." (P. 16.)

We agree with Dr. Philip that it is not fair to infer that, because the power of the heart is impaired by the injury done to the spinal marrow, it receives its power from that organ; and we extend this observation to the inverse experiment, which, we think, does not prove that the power of the heart is derived from the brain. In either case, we believe that the heart sympathised with a shock given to the system, as it does with the crushing of a limb, or with a strong impression made on the stomach; it being a law of the sympathy which exists in so marked a degree amongst the organs of the frame in the higher animals, that a violent injury, suddenly done to any part, affects the vocations and functions of all other parts for a period, and in a degree which depend upon their specific sensibility and their anatomical relations; while the same amount of injury, if inflicted gradually, produces comparatively trifling results. But we deny "that the brain may be wholly removed without at all influencing the power of the heart." It is true that, for a short time after the removal of the brain and also of the spinal marrow, the heart will continue to pulsate, and, by the aid of artificial respiration, its motions can be continued for a longer period; but these motions soon cease, not because the stimulus of red blood is withdrawn, (for it is not,) but because the relation which ordinarily exists between the heart and the central parts of the nervous system has been destroyed. It is a common error amongst physiologists, and one from which Dr. Philip is by no means free, to suppose that certain relations are not necessary to the ordinary functions of parts, because these functions do not cease immediately when those relations are suspended. Every organ in the body has what may be called a specific power, one which depends upon the organization of the part in which it inheres; and so far each organ may be regarded as having an independent existence: but in all animals in which there is a nervous system, properly so called, it is necessary to the permanence of the functions of organs that the relation which has been established, according to the kind of creature, between the separate parts and the central masses of the nervous system, should remain unaltered. There can be no doubt that certain states of the brain and spinal marrow, as well as of other parts of the body, influence the func-

tions of the heart; while, at the same time, it is well known that the heart has a power of continuing its actions for some time after it has been removed from the body: and this power of independent existence seems to vary, in the different classes of animals, nearly in the inverse ratio of the organization of the creature.

Having combated the conclusion of Le Gallois, that the circulation in every part of the body depends on the corresponding portion of the spinal marrow, and having shown that the failure of the circulation which follows violent injury done to any part of the spinal marrow depends upon the impaired function of the heart, arising from the same circumstance, Dr. Philip goes on to say,

“The position of M. Le Gallois and the committee, that the great sympathetic nerve wholly derives its power from the spinal marrow, is a consequence of the opinion adopted by them respecting the exclusive powers of that organ, and must share the fate of the opinion on which it is founded; and the fallacy of the position that the functions of all the vital organs are equally dependent on the nervous system, appears from the simple experiment, . . . of interrupting the passage of the influence of the brain along the eighth pair of nerves, which uniformly destroys the functions both of the stomach and lungs, while it leaves the function of the heart wholly unaffected.” (P. 20.)

The opinion that the sympathetic nerve wholly derives its power from the spinal marrow, is not to be defended, as there is reason to believe that the part of the nervous system to which the name of sympathetic has been given enjoys functions of its own, capable, no doubt, of being influenced by its relation to the other parts of the nervous system, to which it is connected by nervous filaments; but when Dr. Philip says, p. 41, “I think it will be admitted that its [the ganglionic system’s] only functions are . . . to combine and convey the influence of every part of the brain and spinal marrow,” we must protest against being included in the number of those by whom such an admission is made. The part of the nervous system called sympathetic consists, as is well known, of nerves which, proceeding from various organs, combine with each other in forming small bodies called ganglions; from which circumstance this part of the nervous system has received (but, as we shall afterwards show, improperly,) the name of ganglionic. The structure of the ganglions is known to be a plexiform arrangement of nervous fibres, surrounded and supported by a peculiar substance of a darker colour. This mode of structure, and the relation which the sympathetic system bears to the organs from which its nerves proceed,—analogous to that between the organs and the simple nervous system of many of the lower animals,—led physiologists to the opinion that the ganglions of the sympathetic performed to the thoracic and abdominal viscera, and to some other parts, the functions of little brains, in which the sensations of the different parts were combined, and powers created of influencing the functions of the parts in connexion with them. We look upon

this view of the functions of the sympathetic nerve as correct, and do not think that Dr. Philip's experiments tend, in the slightest degree, to impair it. He says, at page 37,

"The heart, the vessels, the stomach, the lungs, were all found to be under the influence of every part of the brain and spinal marrow. Even the action of the vessels, to their minutest ramifications, it was ascertained, by the aid of the microscope, could be increased, impaired, or even destroyed, by agents, the operation of which was confined to any portion of a certain extent of these organs; for the most powerful agent fails to influence either the vessels or any other vital organs, if confined to a minute portion either of the brain or spinal marrow."

Again, at page 38,

"While causes confined to either of them (the brain and spinal marrow,) were capable of increasing, impairing, and even of instantly, and almost wholly, destroying the power of the heart or capillary vessels, the total removal of either or both produced no sensible effect on them."

Now, these facts prove, what might have been expected, that a violent injury inflicted on many parts of the brain or spinal marrow is capable of influencing the functions of other parts of the frame; but the possibility of abstracting the brain and spinal marrow without sensibly, that is immediately, affecting the functions of the heart or capillary vessels, proves that not only the power of moving, but also of associating their movements, exists in those parts, for some time, even in the higher classes of animals, independently of the presence of the brain and spinal marrow. The consecutive or associated movements of the intestinal canal also are performed for some time after the removal of the brain and spinal marrow, and even with more activity after than before the removal of those parts; a fact of which Dr. Philip does not seem to have been aware.

The inference from these observations is, that, as the associated movements of parts in direct communication with the brain and spinal marrow is to be referred to their influence, so the analogous movements of parts in more immediate connexion with the ganglions depend upon the influence of these organs. This conclusion derives much strength from the consideration that the intimate structure of the brain and spinal marrow is of the ganglionic form. In the paper by Dr. Macartney already mentioned, we find it stated, at page 449 of the Report, that "by these means it will be observed [in the brain] that all the white substance, whether appearing in the form of bands, cords, or filaments, or simply pulp, is composed of still finer fibres, which have a plexiform arrangement, and that all these fibres, to the finest that can be seen, are sustained and clothed by a most delicate membrane. By the same mode of dissection, also, it is possible to make apparent the existence of still finer interwoven white fibres in all the coloured substances of the brain, in many of which the nervous filaments are so delicate and transparent that they are not visible

until in some degree coagulated by the solution of alum, or by spirits. Dr. Macartney has thus been enabled to see twenty-six plexuses not hitherto described in the brain." And, at page 451, "the term plexus has been generally employed to signify an interweaving or crossing of filaments; but Dr. Macartney is satisfied that there is an actual union or intermixture of substance in both the plexuses of the brain and of other parts of the nervous system. He has discovered that the roots of the spinal nerves, instead of being connected with the medulla by mere contact or insertion, as hitherto supposed, actually enter into the composition of the filaments of the spinal marrow, and that these roots of nerves (as they are called,) form communications with each other within the substance of the medulla. With regard to the cerebral nerves, also, it can be shewn that they are continuous with the cerebral plexuses in their immediate neighbourhood." At page 453, speaking of the coloured substance, he says, "One obvious purpose of its existence is to give support and security to the finest subdivisions of the sentient substance; we therefore find that it affords such protection in proportion to the necessity: hence, in the brain the coloured substance is soft and tender, while in the ganglia of the nerves it is generally dense and firm. Besides, however, forming a nidus for the ultimate plexuses of the sentient matter, the coloured substance would seem to fulfil some other use not yet ascertained." It would seem that the coloured substance, which appears to possess a peculiar vascular arrangement, is capable, by its relation to the sentient substance, of modifying the qualities of the latter. There can be no doubt that the peculiar properties of highly organized substances are modified, in many instances, by changes in their relations too trifling to influence their common qualities. These observations shew that the distinctive term "ganglionic" has been without sufficient reason applied to the sympathetic nerves, and lead irresistibly to the conclusion that the peculiar structure which, in the brain, is connected with the existence of certain qualities or powers, subserves analogous functions in all other parts of the nervous system in which it is found to exist.

Regarding the "position that the functions of all the vital organs are equally dependent on the nervous system," we have to remark the laxity with which the term "nervous system" is employed by Dr. Philip. In the passage just quoted, he employs it to express merely one of the central parts of that system, as appears from the experiment to which he alludes, in which the division of the eighth pair of nerves destroyed the functions both of the stomach and lungs, while it left the functions of the heart unaffected. The nervous system comprises not only the brain, spinal marrow, other ganglia, and nervous cords, but every particle of nervous substance existing in organs, in the most subdivided form. Legallois is right in saying that the functions of all vital organs are equally dependent on the nervous system, in as much as the functions of each and all

of them are in absolute dependence on that system. The presence of venous substance in an organ is as necessary to the performance of its functions, as is the presence of any other tissue. What Dr. Philip's experiment proves is, that the functions of all the vital organs are not in the same relation to the functions of all the parts of the nervous system; than which position nothing can be more true.

Dr. Philip advocates the theory that an influence, derived from the brain and spinal marrow, is the cause of secretion and the nutritive functions; and supposes that the influence is the galvanic fluid, collected or produced in these organs and transmitted along the nerves. Dr. Alison\* and Dr. Henry† contend, on the other hand, that the processes above mentioned "are independent of any influence or energy necessarily derived from the nervous system;" meaning by that, the central parts of the nervous system. Dr. Alison explains the cessation of digestion on cutting the eighth pair of nerves, by supposing that thus the sensibility of the stomach was destroyed, and that cessation of function was the result of impaired sensibility. In reply, Dr. Philip says,

"In these experiments the sensitive functions remained uninfluenced. When the secretion of gastric juice was wholly destroyed by dividing and separating the divided ends of the eighth pair of nerves, the appetite, as long as there was any part of the gastric juice, previously in the stomach, which remained disengaged, was as good, and the desire to breathe as great, after as before the operation. There was no symptom whatever of the impaired sensibility supposed by Dr. Alison. The assimilating functions alone were impaired or destroyed, precisely according to the degree in which their organs were deprived of nervous influence, proving that the brain and spinal marrow include the organs on which these functions depend, as well as those of the sensitive system." (P. 29.)

Dr. Philip has here, we conceive, fallen into two very considerable errors: he imagines that the appetite for food is produced by the presence of gastric juice in the stomach, and he confounds individual with organic sensibility. That the desire for food does not depend on the presence of the gastric fluid is proved by many facts: for instance, the ravenous craving for food in certain cases of diseased mesenteric glands, and in the recovery from fevers; in both which cases the desire for food is proportioned to the want of nutrition in the system, and by no means to the quantity of gastric juice secreted, or to the digestive powers of the stomach. Birds are satisfied when they have filled their crops with food, although the gastric juice is not secreted in those organs, and is not brought into contact with the food until some time after the appetite has been appeased. What will Dr. Philip say to the fact that the green grasshopper has been fed with his own stomach, taken out of his

\* Dissertation on the state of Medical Science from the termination of the 18th century to the present time, in the *Cyclopædia of Practical Medicine*.

† Report of the British Association for the advancement of Science, 1833.

body, cut into pieces, and presented to the animal, by which it was greedily devoured? But why, it may be asked, does an animal, in which the eighth pair of nerves has been cut while the stomach is empty, begin to eat immediately after, and continue to eat until its stomach is gorged with food? We reply, that it begins to eat because it is hungry; and it knows not when to stop, because that state of the stomach on which satisfaction of appetite depends is, in consequence of the cutting of the eighth pair of nerves, not felt by the individual. Dr. Philip infers, from the disposition to continue to eat, that the sensibility of the stomach was not impaired; we infer from it, that the individual was not sensible of the state of the stomach. But, if the continuity of the eighth pair is necessary to apprise the individual of his relation to his stomach, it is not less so to the perception, by the stomach, of its own relation to the individual. We have already stated our opinion that permanency of function in parts requires a maintenance of their ordinary relations to the nervous cavities; and we have no doubt that the perception of these relations by the organs between which they are naturally established is essential to the due performance of their functions. We are thus led to the conclusion that digestion ceases after the cutting of the eighth pair of nerves, not because the access of the galvanic or any other fluid is thus prevented, but because an essential relation of the stomach has been destroyed.

But Dr. Philip restored the function of the stomach by the application of galvanism. On this we observe, that it is possible, in many instances, where the ordinary relations of parts have been destroyed, to induce by the establishing of new relations a temporary continuation of function. Many substances, called "stimulants," are capable of exciting motion, or other functions, in living parts, even when separated from the body; but such capability does not prove the identity of any of these substances with the cause of function in the living body; for, if it proves the identity of one of them, it proves the identity of all. The sense of fear produces, in many persons, the same effect upon the lower intestine as a purgative medicine; we cannot thus infer that fear and purgatives are identical. Galvanism is a substance capable of exciting the specific actions of many parts of the body in a greater degree than any other substance hitherto known; and it is just as reasonable a supposition that secretion should, for a time, be induced in the living stomach by the excitement of its sensibility by galvanism, as that motion should be produced in a muscle by the prick of a pin or immersion in warm water. It is as easy to explain the connexion between sensibility and secretion as between sensibility and motion. The functions of secretion have been performed in the human fœtus in many instances in which the brain and spinal marrow were wanting; and that secretion, taken generally, is independent of a nervous system, is proved by the mode of nutrition in the simplest animals and plants; but we agree with Dr. Philip that, in the higher

classes of animals, after birth, the due performance of the secretions is influenced by the functions of the brain and spinal marrow, as well as by the state of other parts of the system, although we do not believe "that in the brain and spinal marrow reside the organs of assimilation," nor do we admit Dr. Philip's explanation of the fact.

"There is still another subject to be considered before we can obtain a correct view of the influence of the nervous system in determining the nature and progress of disease. I refer to that effect on each other of the various parts of our frame, to which the term sympathy has been applied, and by which the progress of diseases, and consequently their nature, particularly as regards the more protracted cases, are more extensively influenced than by any other cause.

"It is necessary, in the first place, clearly to determine what we mean by sympathy, or, I should rather say, to point out the sense in which I shall employ it; for few terms have been employed with less precision. We do not refer to what is called sympathy all the effects of distant parts on each other, although there are few of these which have not, by some writer or other, been referred to it. I shall not refer to sympathy . . . any instances in which distant parts influence each other, where the structure of our bodies at once points out the channels of communication. But when a cause, for example, which makes its impression on the stomach, produces palpitation, I shall regard it as affecting the heart by sympathy, because it at once appears from the structure that there is no direct channel of communication between apparently the only parts concerned. The term sympathy, then, may be defined the influence of distant parts on each other, between which the mere structure of our bodies, compared with the phenomena, do (does) not point out the exact channels of communication." (P. 54.)

Now, we are of opinion that, the more we know of the structure of bodies, the better shall we be enabled to recognize and explain the various sympathies between their parts. But Dr. Philip says, p. 56, "I shall not refer to sympathy the influence on each other of the parts concerned in any act of volition." Yet the mere structure of our bodies does not more satisfactorily point out the channel of communication between the brain and a voluntary muscle than between the heart and stomach. The communication between the heart and stomach is not so direct as that between the brain and muscle, but it is equally manifest. Dr. Philip says, p. 58, "the various parts of the living animal may be divided into active and passive. The belly of a muscle is the active, the tendon the passive part. In like manner, the brain and spinal marrow are the active, the nerves the passive part of the nervous system; the latter possessing no power but that which they derive from the former." And, at p. 78, "the brain and spinal marrow are the only active parts of the nervous system, all changes in the system originating in them." We dissent from this view of the matter, and think that the sentient extremities of nerves are as active in recognizing the qualities of substances, and the nervous cords communicating sen-

sations, as are the brain and spinal marrow in discharging their peculiar functions. And that many, indeed almost all, changes in the nervous system originate in alterations of the sensibility of distant parts, many of the phenomena of disease, and amongst others the effect of certain poisons on the animal frame abundantly testify.

Dr. Philip further says, p. 59, "the phenomena of sympathy take place through the active parts of the nervous system, and consequently . . . depend on organs which belong to the central parts of that system;" and rejects the idea that parts can sympathise with each other through the medium of nervous communications, by the ganglions of the sympathetic, or otherwise. Although association of movements to a certain extent seems to exist in some plants, and in the lowest classes of animals, without the intervention of a nervous system, the presence of a nervous system seems to be necessary to the sympathies of disease; and, in proportion to the complication and number of parts of which this system consists, will be found the extent, and the influence of sympathy on the functions of organs. But there are many reasons why the sympathies of parts should not be referred exclusively to the influence of the brain and spinal marrow; the structure of ganglions, wherever they are found, and the relation which they bear to the parts from which they receive nerves, point them out as a medium of sympathy; and the peculiar course and combinations of certain nerves, as of the recurrent branches of the eighth pair, the pterygoid nerves, the chorda tympani, as well as the intricate plexuses formed by the nerves of the thoracic and of the abdominal viscera, and of some other parts, indicate that these more direct communications between parts also may influence their functions. Dr. Philip overlooks what we regard as a most important distinction, namely, that the brain and spinal marrow are the chief medium of those sympathies which produce acts or sensations of the individual, while the other nervous media are subservient to those sympathies not necessarily connected with individual consciousness or volition. He indeed admits two media of sympathy, one belonging to the vital, the other to the sensitive organs, but he places both these media, or "centres of sympathy," in the brain and spinal marrow. He says,

"The parts of the brain and spinal marrow associated with the organs of the sensitive system, and those associated with the organs of the vital system, are distinct sets of organs, having different localities, and obeying different laws. It is quite evident, therefore, that if both the sensitive and (the) vital functions in various parts of our frame sympathise, it cannot be through the same parts of the brain and spinal marrow; as these functions depend on different sets of organs, their centres of sympathy must be different." (P. 62.)

The supposition that the parts of the brain and spinal marrow, associated respectively with the vital and with the sensitive organs, are distinct from each other, is inconsistent with anatomical facts;



as the spinal nerves are the means of connexion to the spinal marrow of the various ganglia and plexuses belonging to the abdominal and thoracic viscera, and the eighth pair of nerves and sympathetic, which connect the stomach, lungs, and heart to the brain, are conjoined to it in parts common to these nerves, and others subservient to sensitive functions. The ordinary sensations of vital parts are not recognized by the individual, although there can be no doubt that they are by the parts themselves, and serve to modify each other's functions; but any strong impression on a vital part, or increase of its sensibility, is made known to the individual in a manner analogous to that by which he becomes acquainted with the properties of the external world. Certain states of the vital organs are capable of modifying the sensations of the individual, although he is not always able to refer the alteration in his feelings to the part from which that alteration is derived; and, on the other hand, changes in the state of feeling in the individual influence the sensations and functions of vital organs.

Dr. Philip proceeds to illustrate his views of sympathy by comparing those of the stomach and liver. He says,

"There is no organ whose sympathies are absolutely confined either to the sensitive or (the) vital system; all organs more or less partaking of the functions of both: but that the different species of sympathy prevail most in different organs, a thousand phenomena assure us . . . . In no other organ are the sympathies of the sensitive system so powerful as in the stomach; an organ of the most acute sensibility; but the sympathies of the vital system are much more powerful in the liver, which, although of very dull feeling, influences, and is influenced by, the vital functions of distant parts, more powerfully (if we except the brain itself,) than any other organ." (P. 64.)

Dr. Philip considers "that between the brain and the liver there is a sympathy which does not exist between the former and any other organ, for which no anatomical investigations would prepare us. Melancholy even derives its name from affections of the liver. Hence also the sick headaches, and other affections of the head which so generally attend what are called bilious complaints." From the sympathy which exists between the liver and brain, and between the latter and other vital organs, Dr. Philip endeavours to shew that organic disease of the brain may arise from affections of the liver, and, by a reflex operation, disturbance of the secretory and other functions may follow upon the state of the brain thus produced: he also thinks that disease of the liver, producing, by sympathy, defective secretion and assimilation, may thus impair the state of the brain, which organ, reacting on the parts originally affected, will aggravate the symptoms of disease.

For the details, we must, however, refer our readers to the work itself, and proceed to the practical part of our subject. At page 79, Dr. Philip says, "As we have seen that on an agent" (the galvanic fluid) "supplied by the brain and spinal marrow, the functions of

assimilation, the most important of the animal economy, depend; it necessarily follows that the derangements to which their immediate organs are subject may be of two kinds; they may either be the effect of causes acting directly on the organs themselves, or on those organs which supply an agent essential to their functions." The diseases arising from the latter cause are those which Dr. Philip proposes to consider, and he selects the affections of the digestive organs to illustrate his principles, as those organs are "both of the most powerful and extensive sympathies, and those the functions of which are most easily made the subject of observation." Having alluded to the effects of the mental functions on those of assimilation, he says, p. 81, "We find similar effects from diseases or accidents affecting any considerable portion of the brain or spinal marrow;" and expresses his surprise that "it had not occurred to physicians that, in cases of chronic derangement of the assimilating functions, as in more acute affections of the brain and spinal marrow, the fault might sometimes be in those organs." In some cases of indigestion which had come under his notice, he says, page 82,

"Death seemed to arise from the failure of the digestive process alone; there was no prominent symptom that was not referrible to its organs, and the patient, emaciated to the last degree, appeared to die of inanition, in consequence of these organs, even where food could still be taken, being incapable of effecting the necessary changes on it. It was in considering these cases, . . . that I was led to suspect that the fault might be in the central parts of the nervous system; and, on examining the bodies of those who died in this way, I found the brain diseased, and particularly in the parts towards its base and the medulla oblongata, from which the vital nerves proceed . . . ." p. 83. "I need not say that it is of essential consequence to be able to distinguish these cases from those of ordinary indigestion at an early period,—the only period at which there is any hope of arresting their fatal course . . . I shall, in the first place, point out the best diagnosis at which I have been able to arrive; for it will readily be perceived, from what has been said, by those acquainted with the principles of our profession, that there must be great difficulty in such a diagnosis."

We refer our readers for the method of forming it to Dr. Philip's work, from page 83 to page 89 inclusive, from which however we shall make the following extract.

"When the patient is not of a variable and hysterical habit,—when the occasional causes have been of a serious and permanent nature, and the nervous symptoms have not shewn themselves for some time after the first application of such causes,—when there is not such derangement in the digestive or other organs chiefly affected, as accounts for the severity of the nervous symptoms,—when the affections, both of mind and body, are less variable than is usual in what are called nervous complaints, and particularly apt to be referred to the same parts of the body,—when there is constantly a more or less general tendency to derangement in the secreting system,—when the heart is more irritable and the lungs less free, the nervous symptoms not yielding so readily as usual, the depres-

sion of spirits more uniform, and the pulse tighter than we should expect to find it from the other symptoms,—when either the recurrence of feverishness or a sense of chilliness and debility is more frequent than is usual in nervous complaints,—when the constitution seems more affected than usual by the continuance of the disease, the strength on the whole decaying,—and particularly when the countenance assumes a sallow colour and an habitually irritable and anxious expression; when the usual means are not attended with their usual effects, our stomachic medicines being in a great degree powerless, and alteratives producing but a transitory, if any, improvement in the abdominal secretions; when these, or several of these circumstances, are well marked in what are called nervous complaints, I have been assured, by repeated observation, that they are not to be safely disregarded." (P. 86.)

The catalogue of symptoms given above, is of a most melancholy description, and ought not by any means to be disregarded; but we are quite sure that they might arise from causes in which organic affections of the brain or spinal marrow had no share.

We shall now turn to the cases. The first is that of Mr. A., an Oxford student, whose case was regarded, by all persons but Dr. Philip, as one of common indigestion. Not improving under the Oxford physicians, he was brought to London, and placed under the care of two well-known physicians. In a few weeks Dr. Philip was called in; expressed his fears of a fatal termination, and stated his opinion that, although the stomach and duodenum were the organs most prominently effected, the origin of the disease would be found in the brain. The patient died in a fortnight, apparently from inanition. The body was examined about twenty-four hours after death.

"On opening the cavity of the cranium, the membranes and brain were found tolerably healthy, perhaps rather softer than usual, particularly as regards the cerebellum and base of the brain, which, together with the medulla oblongata and cerebral nerves, appeared reduced to a pulpy state; so much so, that they would not bear the slightest handling. The viscera in the cavity of the chest presented no unusual appearances; the stomach larger than usual, from distention, . . . the pylorus more vascular than usual, and the duodenum much more dilated, vascular, and attenuated than is natural. The whole of the small intestines were . . . gorged with blood, and of a very dark colour. The liver, spleen, kidneys, and pancreas, were healthy." (P. 91.)

We cannot but be struck with the inconsistency of this report of the examination; in which it is stated that the brain was *tolerably healthy*, and yet, that the *cerebellum, base of the brain, medulla oblongata, and cerebral nerves, were reduced to a pulpy state, and would not bear the slightest handling!* What warrant have we, or has Dr. Philip, (who, we conclude, was not present at the examination,) that "the liver, spleen, kidneys, and pancreas, were healthy!" But the extraordinary feature of this case is, that, although certain most important parts of the cerebral mass were in a state of disorganization, the functions to which they were subservient do not appear to have suffered in the smallest degree. The

senses of smell, sight, taste, and hearing, the sensations and motions of the face, and indeed, as far as we are told, all the functions but those of digestion remained unimpaired; while the cerebral nerves, medulla oblongata, and cerebellum, which, it is generally admitted, are connected with those functions, were reduced to a pulp. "The viscera in the cavity of the chest presented no unusual appearances," although the medulla oblongata had been unfitted by the abolition of its structure, for supplying to those organs that "agent on which their functions depend;" and the withdrawing of which for a few hours, we are told, produces, in them, serious organic disease. Either the morbid appearances in this case have been incorrectly stated, or they are fatal to Dr. Philip's conclusions.

"The next case is that of Miss C., which ran (ran) the same course as the preceding, but was of longer duration, having been protracted for more than two years; and here also the patient appeared to die of inanition."

"The following is Mr. Earle's account of the appearances:—'In the head, slight effusion beneath the arachnoid membrane; substance of the brain very soft, particularly the crura cerebri, and upper part of the pons varolii, which was quite pulpy. Blood-vessels in the substance of the brain large, and loaded with blood. In the chest, *right lung greatly compressed by the narrowness of the inferior margin of the ribs, from old adhesions between the pleura costalis and pulmonalis.* Substance of the lungs firm and hepatized. Left lung more healthy than the right, but slightly hepatized at its upper part.' This state of the lungs, it may be remarked, is peculiarly characteristic of a failure of nervous influence, as appears from those experiments in which the influence of the brain was prevented from reaching the lungs."

Of this, the preceding case was not, it must be confessed, a striking example. "The patient had been subject to cough and oppressed breathing; pulmonary symptoms, however, had never been a prominent part of the disease."

"'The heart,' Mr. Earle proceeds, 'was remarkably small. In the pericardium, about two ounces of water. In the abdomen, *stomach and duodenum much displaced by the compression of the chest by the stays.* Towards the pylorus, the stomach much thickened and indurated, the pylorus hard and contracted. The duodenum large and flaccid; the mucous surface very vascular, villous and soft, readily breaking down on the slightest touch, and apparently approaching to a state of ulceration. Substance of liver hardened. Spleen and kidneys . . . healthy. Intestines congested.'" (P. 92.)

In this case, the passages in *italics* seem to us to point out the causes of disease. There had been old disease of the pulmonary organs, and the compression of the abdomen by stays, had displaced, and probably induced disease in, the stomach and duodenum. The disease in the liver may have been sympathetic with that of the other viscera of the abdomen, or may have been induced by the same cause. Indeed, we look upon the practice of wearing tight

stays as one of the most fruitful sources of disordered sensations, and ultimately of visceral disease and deformity. There is not, in the two cases detailed, any thing which induces us to suppose that the cerebral disease had necessarily preceded the alterations in the thoracic or abdominal disease; and the manifest disproportion which the affections of the latter bear to those of the brain in the respective cases would lead to the opposite conclusion. We have little doubt that many appearances, described as morbid, in post-mortem examinations, are the result of decomposition after death; and, in the cases above mentioned, the absence of disturbance of the ordinary cerebral functions during life would lead us to suppose that such an error might have crept into the investigation.

We must pass over the remaining statements and reasonings of Dr. Philip on this subject, and apply our observations to the treatment recommended.

Dr. Philip says, p. 107, that

"All agents capable of effecting the moving powers of living animals may act either as stimulant or sedative, . . . according to the degree in which they are applied, the stimulant arising from the less, the sedative from the greater, application of them."—(P. 109:) "The assimilating functions depend on the . . . powers . . . of the nervous and muscular systems . . . ; disease always more or less consists . . . in a failure of one or both of these powers . . . . It is therefore, more or less, in all diseases, the object of the physician . . . to restore them. By the stimulant, that is, the invigorating effect of his means, this is accomplished."—(P. 110:) "It is in vain to endeavour to restore the digestive organs, . . . by means directed to them alone, when the cause of failure is in a distant part. The only means which can succeed must include those which give vigour to the central parts of the nervous system, in which the immediate cause exists."—(P. 114:) "In the cure of all diseases the object is to restore the healthy functions of the parts concerned; and, it is only in proportion as this is effected, that the tendency to disease of structure is corrected."—(P. 116:) "It is here necessary, therefore, as far as possible, to remove all causes tending to disturb the functions either of mind or body . . . . It is necessary, as far as we can, to divert the patient's mind from his sufferings by change of scene and such occupations as amuse without fatiguing; and, if we succeed in restoring the healthy state of the mental functions, a great step is made towards the restoration of all the others."

It is consolatory to us to bear our testimony to the excellence of the precepts contained in the last two sentences of our quotation. In a great number of cases of disease of the digestive organs, accompanied by morbid feelings, change of scene and the exciting of pleasurable sensations are among the most effectual remedies; and, as such, are sought after and employed by all sorts and conditions of men. But the influence of mental feelings on diseased sensations is not a proof that those sensations depend upon changes in the structure of the brain. We have known long-continued mental anxiety and discontent produce fatal disease of the stomach

and pylorus; while, at the same time, all the mental faculties, and the functions of the lungs, remained unimpaired. Such cases appear to us to resemble those in which affections of the mind increase, alter, or suspend particular secretions; but do not seem to depend upon any organic change in the substance of the brain. Organic cerebral disease is attended, more or less, by other symptoms than those of impaired pulmonary or digestive function: in such cases we commonly find that the intellectual, perceptive, or voluntary powers are affected in a greater or less degree, and painful sensations are experienced in or near the seat of the disease. In those cases of disease of the spinal marrow, which Dr. Philip considers analogous to the affections of the brain of which we are speaking, besides impaired vital functions, pain and want of voluntary power are constant attendants.

At page 127, Dr. Philip says,

"With regard to the effects of local measures, directed to the brain itself, the result of my experience is, that unless a greater than usual determination of blood to this organ has taken place, they are less beneficial than in any other local disease; and, although I was not prepared to find this so much the case as it is, when we consider that the state of the brain is influenced by, as well as influences, every other part, it is a result for which, in its more chronic affections, we might be prepared."

We are disposed to explain the failure of local remedies in these cases by the supposition that the symptoms of disease do not depend on organic affection of the brain. In organic disease of the spinal marrow, which is attended by peculiar symptoms mentioned before, and which is generally preceded by disease of the adjacent bones or cartilages, local treatment is efficacious.

"The means chiefly directed to the mind, however, if trusted to alone, will generally fail, except in the most favorable cases, and where they can be employed to the greatest extent; and we should have little hope of frequent success, if we were not possessed of others both more powerful, and more under command." These are mercury and antimony, . . . medicines, in large doses capable of the most powerful effects on individual parts, and, in small doses, of the most gentle and salutary effects on the whole system." (P. 116.)

Dr. Philip believes that a tendency to inflammation in any part depends upon a debilitated state of its capillary vessels; and regards stimulant remedies as those applicable to such a state of disease. He says (p. 122,) "of all the medicines we possess, mercury and antimony are the most powerful in exciting the extreme vessels, on the debility of which we have seen the tendency of functional derangement to terminate in disease of structure depends." Although we do not agree with Dr. Philip that inflammation depends on weakness of the capillaries, or that stimulant treatment is in most cases to be employed in inflammation, we do agree with him that mercury given in small doses has a powerful effect on many forms of disease. We think that this mode of administering mercury is, however, more applicable to cases of diseased function, than to those

in which there is evidence of actual inflammation. In the latter cases, the speedy affection of the system by the medicine appears to be one of the most efficacious means of control. We do not pretend to explain the influence of mercury on the living system; but its power of increasing many of the secretions is that property by which it immediately recommends itself to our notice, and, to which its influence on functional diseases may be very probably referred. In the greater number of affections of the assimilating functions, attended by what are called nervous symptoms, we have no doubt that the latter arise, not from any local affection of the brain or spinal marrow, but from the perception, by the individual, of the unusual and morbid sensations of the organs manifestly affected with disease. There can be no doubt that continued disease in the organs of assimilation frequently produces organic affection of the central parts of the nervous system; but, when this effect has been established in the brain or spinal marrow, we think it is accompanied by new symptoms which do not fail to point out the nature of the affection. Thus, while we dissent from Dr. Philip's view of the relation between the state of the assimilating organs and that of the brain, in the diseases of which we are now treating, we approve, on general principles, of his method of treatment in those cases which do not yield to the simpler remedies first suggested by him. It is now generally known that mercury, in small doses, is capable of producing most of its specific effects, without inducing the debility attendant on its administration in larger quantities; and to this point Dr. Philip directs special attention. Antimony, from its influence on the cutaneous functions, is a useful adjunct to the mercurial treatment; and, p. 123,

"In those affections of the head itself, which frequently attend such cases, particularly a sense of tightness and other inflammatory symptoms referred to the head, and depending on the determination of blood to it being increased by the obstructed state of the digestive organs, considerable advantage is often derived from combining with the other means the tartrate of antimony, and occasionally increasing it till some degree of nausea is produced."

This we might expect. In "occasional attacks of extreme nervous irritation," Dr. P. praises the "soothing effect of a combination of tartrate of antimony and henbane, . . . two or three grains of the latter, and as much of the former as can be borne without nausea, generally from the eighth to the fourth part of a grain." From this dose, repeated every half hour until nausea comes on, "composure may generally be obtained, even in maniacal cases." Dr. P. recommends, as a "medicine which excites the nervous with the least disturbance to the sanguiferous system," the carbonate of ammonia: "but, in many instances, even the mildest stimulants increase the tendency to heat and restlessness." Saline medicines are found to be necessary to allay inflammatory tendencies, and to these are added local means for the relief of particular symptoms.

Dr. P. finally recommends voltaic electricity, as a substitute for the nervous influence, and states that, in the earlier stages of disease, he "has repeatedly seen it successful where all other means had failed." In support of his views on this subject, he introduces a letter from Mr. Earle to him, dated 1822, and already published in the author's "Experimental Enquiries," and also in the "Journal of the Royal Institution," in which letter it is recorded that three cases of dyspnoea and indigestion, arising from disease of the spinal marrow, had been benefited by the application of galvanism. We regret that our experience has not been so satisfactory: we have not been able to ascertain, in more than one case, and which was believed to be impaired function of the liver, that galvanism has been productive of beneficial effects. In some cases in which it has been applied, we have been informed that it seemed to aggravate the symptoms; and in the greater number its effects are not perceptible. The low degree of estimation in which galvanism stands as a remedy with the more experienced members of the medical profession, is a convincing proof of its inefficacy.

The work under our consideration has occupied more of our time than seems due to the number of its pages. But it is, in fact, a synopsis of the greater part of the author's previous publications, and involves a consideration of his own physiological opinions and of those of his antagonists. We cannot commend its style, which is diffuse and unconnected. The structure of the sentences is often faulty, abounding in grammatical errors, and obscuring the meaning in a multiplicity of words. We entertain an unfeigned respect for a physician who has devoted so much of the leisure left him, after the toils and anxieties of a large practice, to physiological investigations bearing upon pathology. In investigations attended with so many difficulties, some errors are almost unavoidable, and are not proper objects of critical severity. We can even pardon Dr. Philip's very numerous repetitions of himself. But we have thought it our duty freely to examine the results of his labours, and as freely to discuss their practical applications.

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#### ART. VI.

*A Theoretical and Practical Treatise on the Diseases of the Skin.* By P. RAYER, M.D., Physician to the Hôpital de la Charité, &c. *With an Atlas. The Second Edition, entirely remodelled.*—London, 1835. 8vo. pp. 1238.

THE diseases of the cutaneous surface have been long justly regarded as among the opprobria of medical science. Before the time of Willan and Bateman, this branch of pathology had obtained but little attention. The former sought to make it, what it never will be, a science almost *per se*, and the latter followed him in the attempt. By endless divisions and subdivisions where the laws of



separation were seldom distinct, Willan defeated his object of rendering these affections better understood: he produced a complicated work, difficult to be understood, and sacrificed simplicity and clearness for technicality and diffuseness. Had the magnificent engravings with which his book is adorned been attainable on the terms they are in France, the chances of the extension of the knowledge of cutaneous diseases would have been materially increased, as the errors contained in it would have been more likely to be discovered. Nevertheless, the English writers are still the authorities to whom we must be content to refer; for M. Rayer has certainly not, in any essential degree, cleared up the difficulties with which Willan encumbered the subject.

The first edition of the present work was a very imperfect and crude production; the present, we may safely say, comprehends something of all which can fairly be brought under the designation of skin diseases, and a great deal more. The translator, Dr. Willis, has done ample justice to his original.

In his classification, M. Rayer has followed and copied Willan in all essential respects; he has, moreover, included a great number of diseases not originating in, and not necessarily connected with, those of the skin.

The general character of the work is that of an elaborate compilation, distinguished by extraordinary industry, and exhibiting an acquaintance with the writings of ancient and modern writers of all classes as regards dermatology. The introduction alone contains 150 references to other authors, and the volume itself has perhaps as many more as it contains pages of letter-press. The discretion and judgment with which many of these have been made do not appear quite so conspicuous; since they often refer to productions of very doubtful pretensions, and are more likely to puzzle the student than to enlighten him.

The first section contains *Inflammations having a single elementary form*, and comprises Erythema, Erysipelas, Rubeola, Scarlatina, Roseola, Urticaria, and several inflammations artificially produced.

“The common and generic anatomical character of these inflammations is the *red tint* in the parts of the skin affected; the red colour disappears on pressure, and returns immediately on its removal. The injection of the skin, which is slight in roseola and rubeola, and often very passing in urticaria, is more intense and permanent in erythema and erysipelas. Its principal seat is in the vascular network of the skin; but in erysipelas, urticaria, and even in rubeola and scarlatina, it will sometimes extend to the subcutaneous cellular tissue.” (P. 97.)

This statement deserves the attention of the junior practitioner. The consideration of the actual seat of inflammation determines the general principles of treatment in all other cases; but, strange to say, in diseases of the skin, this circumstance has been overlooked by our best authors. The spreading of the cutaneous inflammation to the subjacent cellular structure, and the degree in which it takes

place, may, under no very extraordinary circumstances, convert a case of erythema into simple erysipelas, which latter may speedily run into the gangrenous species of this disease; for, what is there in Willan's description of *E. gangrenosum*, but that of inflammation affecting alike deep-seated and superficial parts? As we shall have occasion to notice the nature and treatment of this interesting disease in another place, we pass it over here.

On the subject of Rubeola, Scarlatina, and Roseola, we do not find anything sufficiently important to notice; and there is nothing novel in the chapter on Urticaria.

*Bullæ, or Bullous Inflammation.* These are the affections designated, by Willan and Bateman, Pompholyx and Pemphigus. The undeviating external character of these diseases (probably we ought not to speak in the plural,) is a sudden appearance of vesicles on the extremities, on the first appearance not exceeding the size of a grain of wheat, increasing in a few hours to the size of a walnut; when the increasing distention of the cuticle leads to its rupture, and the fluid escapes, leaving an abraded cutis.

The structural changes, says M. Rayer, are those produced by burning or blistering; the causes obscure. Our author does not seem to be aware of the intimate connexion of this with the following section, *Rupia*: nevertheless, his remarks wear a practical character as regards both.

*Herpes.* "The anatomical structure of the vesicles and vesications of *Herpes zoster* may be studied during life, by opening them with the point of a pin or lancet. It will then be seen that, besides serum, the greater number of them contain a small piece of false membrane, which adheres very firmly to the vascular rete of the true skin below. The rete, of a vivid red colour, with small granulations formed by the papillæ scattered over its surface, occasionally presents minute points of a violet hue, especially under those vesicles that have been filled with bloody fluid. The quantity of serum effused is sometimes exceedingly small." (P. 255.)

The foregoing pathological remark, the correctness of which we do not doubt, was (as far as we know) first made by our author. We have often been surprised at the intense agony of feeling expressed by the sufferer under shingles, and surprised also at the rapid subsidence of the pain after a certain period. Is the false membrane a very superficial slough of the surface of the cutis? or is it simply an effusion of coagulated lymph mixed with the contents of the vesicle?

The commonly harmless termination of this affection, and its tendency to run its course despite of treatment, are well known; and we regret that there does not seem to be anything new offered by our author in a therapeutical point of view. *Herpes zoster*, or the "shingles," is the most gigantic of the family, and it is seldom in England found to degenerate in its course to anything like those forms mentioned by our author. It is seldom, in truth, here thought of any importance, although the details of many continental authors abound with descriptions which plainly connect it with formidable

constitutional disease. The same, and perhaps a greater degree of violence of character will be found to prevail in cases of herpes in unhealthy localities, where the people are miserably fed and hardly worked. This feature of distinction may be traced so satisfactorily, and accounted for so clearly on physiological principles, that the most sceptical can hardly doubt. Thus, we see in the descriptions of Alibert and the author before us, as well as in many others, accounts of almost all diseases of the skin, so widely different from any which are observed in the British islands, that we doubt, and occasionally deny, their identity. We think we could satisfactorily illustrate this position by reference to the disease termed Pellagra, which we cannot help regarding as a very ordinary affection, aggravated into malignity by the peculiar circumstances of the people among whom it prevails: but our limits only permit us to allude to the circumstance.

*Scabies.* The late jubilee among the pupils of St. Louis, in consequence of the *discovery* of the itch insect, does not seem to have been contemplated by M. Rayer, any more than the necessity for M. Alibert's prize to the successful competitor. He appears to have exercised his usual powers of research on the subject among old authors, and the results do not, to our view, leave much to be proud of on the part of the alleged discoverer. This we know, moreover, that there are, or were some little time past, some six old women in St. Giles' Workhouse who would pick you out of the newly admitted children's skins as many as you desired.

*Acne.* By the term acne we have all been led in England to understand an *eruption of pimples* of a particular, or rather a peculiar kind. Willan places them in the order tubercula, because they present to the touch the feeling of a small hard granule or tubercle; but he subsequently intimates his conviction that they are the results of a part of a secreting organic structure becoming inflamed. Making the mistake of supposing a secreting follicle the excretory duct of a gland, he says the former becomes obstinate, and causes inflammation. The follicular apparatus of the upper parts of the body is, however, now better understood.

"Under the title of acne, then, I shall describe a chronic inflammation of the sebaceous follicles, common in youth and manhood, characterized by isolated acuminated pustules, most usually developed on the shoulders, sternal and scapular regions, the skin of which looks dense and unctuous, and more rarely on the face: these pustules are succeeded by livid or violet-coloured spots, by tuberculated indurations of the same or of a milky white hue, almost always intermingled with the accumulations of sebaceous matter with black points, vulgarly styled *worms*, and with follicular enlargements." (P. 464.)

"The mode in which the pustules of acne are formed, the different morbid features that almost invariably accompany the disease, the enlargement of the follicles on those regions of the skin where the acne appears, the immunity from this disease enjoyed by those districts unprovided with sebaceous follicles, such as the palms of the hands and soles of the feet, are so many circumstances that authorize us in assigning the follicles as

the element of the skin which is particularly attacked in acne. This presumption, indeed, becomes a matter of certainty when the nascent and untouched pustules of the disease, (or those which are older,) after being laid open with the point of a lancet, are examined through a magnifying glass. Mr. Plumbé first satisfactorily demonstrated this anatomical fact; but he fell into an error when he maintained that the inflammation of the follicles was always excited and kept up by the accumulation of sebaceous matter within their cavities. The whole of the pustules of acne certainly do not appear as sebaceous concretions, or follicular elevations, at their outset: a certain number only commence in this way; the rest, from their origin, exhibit inflammatory characters (sanguineous injection, followed by the formation of pus), and blood or pus may frequently be extracted from their cavities, unmixed with indurated sebaceous matter." (P. 466.)

Now, when we consider that the follicles may be extremely minute, and that a correspondingly small portion of sebaceous matter may have obstructed the follicle, we can at the same time admit that a small portion of the same sebaceous matter may have become dissolved in the pus and blood which surrounded it. But the matter is not one of much practical importance.

*Sycosis.* This disease is hardly suspected to exist in England by those who have seen the frightful delineations of Willan and Alibert, (under the name of mentagra,) and others; it is nevertheless extremely common among all classes: it is acne of the chin—on a part covered by hair; it is constituted of inflamed follicles, and the practice of shaving keeps up that inflammation as long as it is continued.

"Sycosis is characterized by the successive evolution of a number of small pointed pustules, similar to those of rosacea, and scattered singly or clustered together over the chin, upper lip, submaxillary region, and lateral parts of the face. . . . Slight, partial, and passing pustular eruptions are usually observed to take place for several months, or even some years, upon the regions indicated, before a complete attack of sycosis occurs. In some rare cases, and almost always under the influence of appreciable causes, . . . the disease unexpectedly attacks the whole of the inferior maxillary region. The eruption is occasionally confined to the upper lip; at other times to one of the sides of the chin, to the lateral parts of the face, or to a part only of the submaxillary region; the disease in other instances attacks the whole of the regions indicated above, simultaneously or successively, and even extends to the roots of the hair in the nape of the neck, (*Sycosis capillitii*.) . . . On the second or third day of their formation, the tops of these elevations grow white, and are filled with a pale yellowish pus; they subsequently increase a little, but it is seldom that they surpass a millet-seed in size. Almost all of them seem traversed by a hair; they do not discharge like those of impetigo. Between the fifth and seventh day each pustule bursts spontaneously, its sides shrink, and a slight oozing takes place, which gives rise to a brownish crust that scarcely adheres to the skin, and is confounded at its edges with the epidermic furfuræ which are thrown off by the inflamed integument in the vicinity of the pustule." (P. 481.)

Even this description scarcely applies to anything which is seen

in the better classes of society in this country, and what follows, under circumstances favorable to the extension, is, we are thankful to say, entirely unknown among us.

"When the pustules are grouped or clustered in considerable numbers, the inflammation extends to the cellular membrane immediately under the inflamed portion of corion, and gives rise to a true phlegmonous swelling. The chin, the sub-maxillary regions, and the upper lip, then present small, hard, painful red *tumours*, covered with pustules or incrustations of considerable thickness, and a mixed yellow and greenish brown hue. . . . When the pustules are thrown out repeatedly on the same places, the inflammation extending from the corion to the subcutaneous cellular membrane, there occasions indurations which before long present the appearance of voluminous tubercles. . . . When the eruptions have been copious and severe, and have succeeded each other rapidly, these tubercles increase in number, and spread over the whole extent of the chin. . . . It is then particularly that the confused mixture of pustules, tubercles, and incrustations, give a disgusting character to the appearance of sycosis. Arrived at this stage, sycosis is always an obstinate disease, the cure of which is never obtained but with great difficulty. The skin occasionally becomes very much altered, and swells to such a pitch as to appear covered with moist and vegetating *tumours*." (P. 482.)

*Impetigo*. This is, perhaps, among the most common of skin diseases in this country. Among the better classes of society, if we except lepra, it is more frequently seen than any other. The author observes that it is most frequently seen on the face, and next in order on the neck, trunk, and extremities. The reverse of this is certainly the case in England; as the extremities, particularly the lower, are its chief seat. M. Rayer adopts the divisions and terms of Willan: *sparsa*, *figurata*, &c. He has mixed the *crusta lactea*, or *porrigo larvalis*, under one general head, with the other forms of this disease; and it is more than probable that his judgment is correct in this respect. This disease is certainly not allied by any essential characters to *porrigo*; but it is equally true that it is widely different from the *impetigo* of any other period of life.

*Porrigo*. Of the varieties of the affections usually classed under this term, we find in our author scarcely more than the names. With the exception before alluded to, he comprehends all under the term *favus*. Here again the apprehension that we are studying the diseases of a dirtier class of paupers than any in England presses on us.

"The word *favus*," says M. Rayer, "is used to delineate a chronic inflammatory affection of the skin, essentially contagious in its nature, and principally characterized by the appearance of its scabs, which are of a clear yellow colour, very dry, strongly adherent to the skin, circular and cupped, and either isolated or agglomerated into continuous masses with raised and inverted edges; the surface of which presents numerous characteristic depressions." (P. 510.)

"The smell of the scabs and incrustations of *favus* is singularly like that of the urine of the cat. When they are softened with emollient cataplasms, the smell changes and becomes faint and sickly, and something similar to that of bones which have been boiled with their ligaments." (P. 512.)

"Pediculi are usually found in vast numbers among the crusts of favus; and children seem to taste a sort of ecstasy in tearing their scalp with their nails. The blood mixed with the discharge poured out in these and similar cases, by drying, forms incrustations of a colour different from that presented by the ordinary crusts of favus." (P. 513.)

If there are such cases in England often seen, we are very much mistaken; the progress of formation of such accumulated masses of disgusting morbid secretions would not be permitted by the poorest parent of a family, and it would be a libel, we trust, on our lowest poor-house to say that it contained an inhabitant presenting such a loathsome state of artificial disease.

The various theories which have been formed as to the seat of this disease are next discussed, as also its pathology; in neither of which discussions we find anything novel. At length we arrive at the "depilatory plan" of treating it, which is said to be, in old standing cases, "as indispensable as is the removal of the nail in certain varieties of onychia."

The well-known effect of the old pitch cap had long proved to us the correctness of this assertion, but how horrible was the suffering it inflicted; applied to the poor child's head, and attached alike to the sound hair of the healthy parts and that of the diseased, and torn with violence away, uprooting at one fell swoop all within its merciless entanglements, despite the screams and agony of the sufferer! To avoid this process, a pair of forceps was constructed by Mr. Plumbe; but our author states, in speaking of them, "that this procedure, which lasts infinitely longer than the other, is in itself excessively painful when the hairs still adhere to their bulbs." (P. 523.) We believe Mr. Plumbe cautiously avoided the use of his forceps when any attachment of the hair sufficient to give pain remained.

Of all the depilatory methods proposed, says M. Rayer, "that of the Messrs. Mahon is unquestionably the best." But the Messrs. Mahon, it seems, sensible of its value, persist in keeping the said depilatory method a secret; and the physicians and surgeons of the Hospital of St. Louis permit two nostrummongers to traverse the wards of their hospitals, not merely uncontrolled, but, it would appear from our author, venerated and respected. This is certainly a state of things to be much deprecated, for the honour and dignity of our profession. Surely, if the method is really so valuable as is stated by the French physicians, (and not only our author but Alibert and Bielt declare that no other means of cure can compete with it,) the secret ought to be purchased by government, and made known for the good of the public.

The translator, we observe, in a note, states that the chief secret of MM. Mahon's success consists of a long and persevering attention to cleanliness. That it is a very essential point there is no doubt, but there is evidently more than this. There is a secret depilatory powder and a secret depilatory ointment employed, and the imitation or analysis of them appears not likely to be accomplished by

any of the French savans, seeing that the said secrets have been kept so long, and continue to be so well paid for.

*Ecthyma.* We cannot say that M. Rayer has been so successful in the elucidation of the etiology or pathology of ecthyma as Willan and Bateman were before him, in their division of the disease into four species, the common, the lurid, the infantile, and cachectic. Thus, they observe that *E. vulgare* "commonly supervenes on a state of languor of some continuance, with loss of appetite, irregularity of the alvine evacuations, and pains in the stomach and limbs." Then, "the *E. infantile* occurs in weakly infants, when insufficient nourishment is afforded them. The *E. luridum* again is remarkable for the dark red colour of the bases of its pustules, and "is most frequently seen in persons of advanced age, who have injured their constitutions by hard labour or intemperance; and is most severe in the winter season." Dr. A. T. Thomson, in his late edition of Bateman, says that "a symptomatic ecthyma, which bears a considerable analogy to *E. luridum*, sometimes occurs during the cachectic state which follows the measles, as well as the other debilitating exanthemata." A consideration of the several varieties of this disease suggests the question, whether they might not be all more satisfactorily included under some more general term, implying the sense of "cachectic disease of the skin."

No less than thirty pages are occupied by an account of diseases which can hardly be considered as properly those of the skin; such as the sty, the carbuncle, and malignant and gangrenous anthraxion. The article on the latter, however, is well worthy of perusal.

In the account of *Lichen* and *Strophulus*, the two first genera in M. Rayer's order *Papulæ*, there is little to be found in addition to what is supplied by English authors; and, indeed, this part of the work is more remarkable for a free appropriation of their labours than any improvement of their views. Their faults as well as their excellencies have been freely copied, and the most trifling popular eruptions of infants assume, in M. Rayer's work, all the importance they obtained in those of Willan and Bateman.

This class of eruptions is seldom the result of any cause in operation in the system more powerful than a little temporary irritation from disordered stomach or teething combined with repletion. Perhaps an attempt to arrange the etiology of cutaneous diseases would properly commence with these, as the first links of a chain, the last or most extreme parts of which would be constituted of ecthyma, rupia, and such others as originate in scorbutic and impoverished conditions of the system. The results of the methods of treatment, too, which such a view would naturally suggest, are, although equally simple, equally widely different from each other. None of these exhibit obstinacy of character; they seldom defy the efforts of the practitioner for any length of time, or give occasion to much suffering to the patient.

Of *prurigo*, certainly one of the most intractable and intolerable of diseases, the author has given a clear and accurate account.

Simple or sulphureous baths, those of soap and alkalies, of sea water, of gelatine and sulphur combined, ointments of hellebore and hydrochlorate of ammonia, bleeding, diluents, liquids, low diet, and purgatives, constitute the chief sources of dependence in the treatment of the disease; where it is general, the author observes, that external applications have appeared to him so advantageous that he recommends, except in a few cases, the treatment to be confined entirely to them.

*Squama. Scale.* "It is the distinguishing character of the squamous inflammations to appear as red elevations, spots, or blotches, upon which *squamae*, in other words, laminae of the cuticle altered in various degrees, are formed, thrown off, and incessantly renewed. The number of squamous inflammations reckoned is six: lepra, psoriasis, pityriasis, pellagra, acrodynia, and scaly syphilis. . . . I have . . . separated from the group of pityriasis two varieties of cutaneous affections, described by Willan under the heads Pityriasis versicolor and Pityriasis nigra. These I denominate Chloasma and Melema, as I hold that they belong essentially to the class of pigmentary affections. Mr. Plumbe and Dr. Duffin have proposed to unite the description of lepra to that of psoriasis. To place the distinguishing characters of these two diseases in greater relief, I have continued to describe them separately, although I still acknowledge the striking analogy that exists between their various symptoms. Inflammation of the reticular tissue and papillae is the first and main feature of squamous affections." (P. 614.)

M. Rayer, while writing the above, appears to have forgotten that the pigmentary membrane has been denied at least, if not proved to have no existence, by the highest authorities in his own country. His transposition of *P. versicolor* and *P. nigra*, on the grounds alleged, will hardly therefore be considered justifiable; and we are decidedly of opinion that the external characteristics of the squamous eruptions, one and all, may be more satisfactorily accounted for than by attributing them to the derangement of structures of doubtful existence.

Attention to the general health, combined with tonics, among which arsenic, as known of old amongst us, constitutes the most powerful remedies which M. Rayer is aware of in these diseases.

The *tubercular inflammations* are characterized at their height by small, solid, circumscribed, indurated, and enduring tumours, which, lasting for months or years, end by becoming ulcerated. They are six in number: Lupus, Cutaneous Scrofula, Cancer, Greek Elephantiasis, Tubercular Syphilis, and artificially excited Tubercles, the group differing essentially from that of the same designation by Willan and Bateman. These different diseases are each treated of at some length. Their description and history are accurately given; but our readers will have anticipated that they, for the most part, are as intractable in the hands of our French brethren as in our own. We do not discover among the remedial measures any thing to which we were previously strangers. The reader will, notwithstanding, find the whole well worthy of his attention.



We pass over a long account of several important diseases which cannot properly be classed among cutaneous affections, such as, Anæmia, Chlorosis, Scorbutus, Purpura, Leucopathy, artificial staining of the Skin by Nitrate of Silver, &c.

Of this latter singular affection our author has given us the results of a post-mortem examination of a man twenty-eight years of age, who had taken the medicine for thirteen months for the cure of epilepsy, consequent on disease of the brain.

“All the external integument was of a grey slate colour of moderate intensity. This hue, which was nearly the same in all parts of the skin, did not prevent the vascular colour of the cheeks from being distinguished. The edges of the lips, their internal surface, the inside of the cheeks, and both sides of the tongue, presented an exactly similar hue; the internal surface of the whole alimentary canal was of the same colour as the skin, and the upper opening of the gastro-pulmonary membrane. In the stomach this tint was extremely deep; it was not mixed with any violet-coloured marblings, depending on vascular patches or striæ; it was uniform over the whole extent of the viscera. In both the small and great intestines it was a little clearer, but still very appreciable: it was uniform as in the stomach, and slight traces only of vascular ramifications were discovered in the whole extent of the alimentary canal.” (P. 963.)

The impression seems to have been entertained by different authors that this discoloration does in time diminish in intensity; if so, this change must take place very slowly. We recollect hearing it stated by the late respected Dr. Babington, than whom no man could be better qualified to give evidence on the subject, that, in the course of his long professional life, he had never known that stain disappear or change. It behoves the practitioner therefore carefully to deliberate before he adopts such a medicine as this.

There is no novelty whatever in the account of Ichthyosis. Horny Productions, Cicatrices, Gangrene, Carbuncle, Onychia, Grease, Scabies of Animals, &c. occupy the remainder of the pages; and these we must pass over.

We take leave of our author with the declaration that his work is a monument of the most extraordinary industry. We have no hesitation in adding that, although far from faultless, it is the best book we possess, in any language, on the subject; and that, should any of our readers desire to sail over the unbounded sea of letter-press formed of the history and pathology of the diseases of the cutaneous surface, M. Rayer should be his pilot.

Nevertheless, a great book is a great evil; and this axiom applies forcibly to the work of M. Rayer. He has, moreover, in our opinion, committed a great error, treading in the steps of several of his predecessors, in so multiplying, dividing, and subdividing simple affections, differing only in stage or degree, into species and varieties, (giving each a separate designation,) which have no foundation in reality. It is evident that this practice is destitute of utility. That it is injurious to the advancement of knowledge of these diseases is manifest, because it confuses and discourages the student, let his

zeal be what it may in its pursuit. A sensible and well-conducted attempt to bring to this subject the simpler means of illustration and description employed in other branches of pathology is still wanting; and, if the subject were confined to the history, pathology, and treatment of the diseases of the skin as they appear in the British islands, a work of far more utility for practitioners in this country would be the result than that furnished by M. Rayer.

We cannot conclude this article without special and particular notice of the Atlas of Illustrations, which forms so important a part of M. Rayer's work.

That which strikes us most in glancing at M. Rayer's atlas is the immense number of representations which it contains of the various acute and chronic diseases properly belonging to the skin, besides a great many of other diseases which dermatologists in general are not disposed to consider as belonging to the pathology of this tissue, such as cancer, melanosis, horny productions, chancres, &c. However, this addition to the atlas of cutaneous diseases, properly so called, must, as we have already stated, be regarded as a proof of the industry and zeal of the author, and as evincing a desire on his part to render the subject of which he treats as complete as possible. Considered in this respect, but more especially in reference to the number of illustrations of the general species and varieties of each order which it contains, this atlas far surpasses any that has yet appeared.

With regard to the illustrations furnished by the individual plates of the particular diseases belonging to each order, most of the subjects from which they have been taken appear to have been well chosen; many of them have been faithfully represented; others less so, either from a defect on the part of the draftsman or the colourist. There is no tissue, the faithful representation of whose diseases depends so much on the aid of colour as the skin; the species and varieties being often founded on the presence or absence of colour; and different shades of the same colour, particularly red, serving as a distinguishing feature in several of the stages of the exanthemata, by marking the character and degree of the inflammation by which they are accompanied. The syphilitic nature of many cutaneous eruptions is determined by the peculiarity of their colour (*couleur cuivrée*); and none so conspicuously as that which follows the internal exhibition of the nitrate of silver. The technical term of *dirty* or *muddy* colouring applies to several of the plates in this atlas; but, as a whole, it presents a good specimen of the French school; and, although most of the legs, faces, &c. are curtailed of their "fair proportions" and unadorned, their infirmities are more true to nature than those of the beauties which we all admire in the grand work of M. Alibert. Representations of cutaneous diseases on a small scale, that is to say, in *bits* or *squares*, or what is worse, on a *diminished* scale, possess little value, or mislead the student; and this our author appears to have avoided, as far as the size of the atlas and the number of figures it contains, would

permit. The plates of Willan and Bateman, and of Alibert, strike us at first sight as being more natural than those of Rayer; but, had those of this author been done on the same scale, with that sort of frame-work which a part of the dress always forms to a picture of even a portion of the human figure, they would have gained much, if not as specimens of art, as more impressive, because more accurate representations of nature.

It is in consequence of a total want of these pictorial accessories that Dr. A. T. Thomson's *Atlas*, although better coloured than that of Rayer, conveys but an imperfect and indefinite idea of cutaneous diseases to the mind of the student. On the whole, Rayer's *atlas* may conscientiously be said to contain the most complete series of illustrations of cutaneous diseases hitherto published, and is, besides, not only cheaper than any other, but well worth the sum for which it is offered to the profession.

#### ART. VII.

*Medico-Chirurgical Transactions; published by the Royal Medical and Chirurgical Society of London. Volume the Nineteenth.—London, 1835. 8vo. pp. 438.*

SINCE the publication of the last volume of their *Transactions*, the Society has received the honour of his Majesty's royal charter of incorporation, constituting the Society the Royal Medical and Chirurgical Society of London; designating his Majesty as the patron of the Society, and creating its members Fellows of the chartered body. The Charter and Bye-laws of the Society are given as an introduction to the present volume, with a list of the subscriptions to defray the expenses of the charter. No proof can now be wanted of the very high rank which this Society has always maintained among the scientific bodies of this country; and, if it were required, it would be afforded by the honour of having received the royal patronage, which is never conferred upon any society without deliberate enquiry into the claims which exist for so flattering a distinction. In virtue of their incorporation, the Society is relieved from the regal restrictions of the statutes of Mortmain, and may now "receive, hold, possess, and enjoy any goods and chattels whatsoever." We hope that those friends to the medical profession who have property to bequeath, and upon whose generosity there are no stronger claims, will bear in mind the privilege so graciously bestowed by the King.

Nothing can be further from our intention than to enter into any lengthened enquiry of the laws or internal management of the Society. We believe that the former are, upon the whole, excellent; and that the latter is judiciously conducted. We must be allowed to hint, however, at the necessity of a very rigid adherence to the bye-laws of chap. xii., which refers to the publication or non-publication of papers presented to the Society. This is a point

upon which dissatisfaction very easily arises; for who so likely to complain as the author of a rejected paper; who so likely to distort the slightest deviation from the laws into an act of premeditated partiality? The third section of the xvth chapter of the Bye-laws is thus worded: "The business of the Society, at their ordinary meetings, shall be to converse upon professional subjects, and to hear and read letters, reports, and other papers, on medicine or any of its branches." Now, in general, the meetings of the Society are wholly occupied by the reading of papers, most of which are subsequently published in the Transactions. It is true that any member may introduce a miscellaneous subject for consideration, but it has always appeared to us, and we know that others think the same, that such conversations are but coldly admitted by the president, as if they were interruptions to what we consider the comparatively dull employment of hearing papers read by the secretaries. We have heard, for example, the president cut short an interesting conversation, that the reading of a paper might be begun. More frequent discussions among the members would certainly give animation to the meetings, and render them much more attractive than they are at present; while nothing could be easier than to prevent that tone of flippant disputation which reigns in some societies, and which would certainly derogate from the character of the Royal Medico-Chirurgical.

The first paper in the volume is entitled "*Cases of Fracture of the Neck of the Femur, with the Appearances observed after Death,*" by Mr. HOWSHIP; a gentleman who has largely contributed to the pathological and practical improvement of surgery. Nine cases of fractured cervix femoris are related, not for the purpose of demonstrating the complete ossific union which occasionally takes place, but to shew the different attempts made by nature to repair the accidental injury in different cases. These cases also convey a useful lesson to the surgical practitioner as regards his diagnosis; for in each there was some variety, both in the appearance of the limb and the symptoms produced. We confine ourselves to the important facts.

**CASE I.** *Immediate Shortening, with Eversion of the Limb.—Appearances at three weeks.* The patient had fallen on the trochanter of the right femur, and from that moment was unable to stand or move. The day after the accident, the right limb was an inch and a half shorter than the left, with eversion of the foot. She sunk, and died three weeks after the fall, without much suffering.

*Dissection.* Fracture oblique. Above, it passed through the cartilaginous margin of the head of the bone, extended obliquely round, and separated the lower part of the neck three-fourths of an inch below its junction with the head. The neck of the femur had lost half an inch of its length, by absorption. No appearance of any attempt towards union. Capsule thickened and ecchymosed. The round ligament of a livid red colour, and wasted so as to be scarcely perceptible.

**CASE II.** *Slight Eversion. No Shortening till six weeks after-*

*wards.—Appearances at two months*, when Mr. Howship examined the body. At first, both limbs measured the same length, the only peculiarity being a slight eversion of the leg and foot. The limb admitted of being moved and raised with facility, and without pain or crepitus. Patient suffered little; but latterly the limb imperceptibly shortened about an inch.

*Dissection.* Fracture had passed round the cervix near the head of the femur. The ligamentous expansion covering the neck of the bone was compact in texture, and much thickened. The other changes that were detected were the apparent result of inflammation. "In the abdomen, the common trunk and internal iliac veins on the left side were filled with a compact coagulum of blood: the common iliac especially was so perfectly filled, that it is not easy to understand how, towards the close of life, the blood was returned to the heart; although there had been no œdema of the lower limbs." We have in our collection an interesting specimen of a similar kind, taken from a woman who caught cold while she was menstruating. Symptoms of phlebitis came on, and she died in a short time. The abdominal cava, the iliac and femoral veins, are seen completely obstructed by firm, long coagula. In this case, also, there had been no œdematous appearance of the limbs during life.\*

*CASE III. Immediate Shortening, with slight Eversion of the Limb.—Appearances at five months.* The day after the accident, great pain was felt on moving the limb, but no crepitus was discoverable. Right limb an inch shorter than the left. The patient, æt. 78, died from sloughing of the integuments covering the sacrum.

*Dissection.* Fractured head of the femur separated within the capsule, which was thickened, compact, and ecchymosed. Round ligament wasted and pulpy. The remains of the fractured neck were undergoing absorption.

*CASE IV. Immediate Shortening and Eversion of the Limb.—Appearances at ten months.* A woman, æt. 79, fell on her right side. The same evening, Mr. H. found the neck of the right femur fractured, with great pain in the joint, inability to bear motion; shortening and eversion of the limb. This patient was imbecile, and would not submit to any treatment: she sank, and died ten months after the accident.

*Dissection.* Capsule of the hip thickened. The fracture had separated the neck irregularly, about half an inch below its junction with the head. Neck of the femur nearly absorbed; the part remaining being modelled into a little crutch, exactly fitted to receive and support the head, and almost entirely covered with cartilage. At the upper margin of the neck, and beneath the ligamentous investment, was a small flattened piece of cancellated bone, covered with cartilage, attached to the ligament, yet entering into the moving fabric of the new joint.

\* Andral makes some interesting observations on this subject, in his *Anatomie Pathologique*, t. ii.—Rzv.

**CASE V.** *No immediate Shortening; slight Eversion of the Limb. —Appearances at twenty-two months.* E. B., æt. 79, fell upon the right trochanter. The same day, both limbs were of the same length; knee and foot slightly everted; hip-joint admitting free motion with pain. She could neither stand nor move the limb, complaining of pain in the joint and groin. In this instance it was at first doubtful whether fracture existed. Counter-irritation, by blisters, relieved the pain, and gave an improved power of moving and bearing on the limb: but the principal purpose for which this plan of treatment was adopted was not obtained, for gradual shortening of the limb took place. Her general health gave way, and she died.

*Dissection.* Right leg and foot much wasted, and three inches shorter than the left. Head of the femur separated from the shaft, by a fracture passing round near the margin of the head. Neck of the femur gone. From the upper part of the basis of the neck of the femur many rounded projections of bone, covered with cartilage, were put forth, over which the thickened capsule moved with facility. Round ligament wasted and shrunk.

**CASE VI.** *Immediate Shortening, and Eversion of the Limb.* In this case, eight years after the accident, a partial, compact, ligamentous union was found on dissection. About six years after the injury, Mr. H. met the patient, a woman, æt. 70, walking without crutches. Her right hip, upon which she had fallen, was now nearly as strong as ever. She felt no pain in leaning, or even striking it with her hand.

**CASE VII.** *Slight Eversion; no immediate Shortening. —Appearances at fourteen years.* In three months after the accident this patient, æt. 62, walked well without a stick. The injured limb was gradually shortened about two inches. On dissection, it was found that the head and neck of the bone were steadied by fibrinous bands, which gave freedom and facility of motion to the newly formed joint.

**CASE VIII.** *Immediate Shortening and Eversion of the Limb. Compact ligamentous union at five months.* M. C., æt. 66, fell on the right hip, and fractured the neck of the femur. Limb was immediately shortened two inches and a half; foot everted. Here was found, after death, a perfect example of compact ligamentous union.

**CASE IX.** *Immediate Shortening. At first slight inversion, and subsequently eversion of the limb.* This patient partially recovered the power of moving about.

“*Cases of Warty Tumours in Cicatrices.*” By CÆSAR HAWKINS, Esq.

This paper commences with some very judicious comments on the various meanings assigned by different practitioners to the term *malignant*, as applied to tumours and other diseases. Hence, of course, great obscurity in pathological anatomy, which might

have been avoided by more precise definition. By a malignant disease is meant, by one person, a local and fatal malady, depending upon a constitutional taint, in the way that cancer and fungus hæmatodes are invariably fatal. Another calls a disease malignant because it is incurable, and without any definite reference in his mind to the state of the constitution. Thus, lupus and the corroding ulcer of the uterus are called malignant, though the disease does not contaminate either the surrounding parts or the absorbent glands, by the formation in them of a *new structure*, like that developed in the seat of the primary disease; nor is a similar disease established in another part of the body by means of this contamination.

"Even in those diseases which are manifestly malignant, in the more confined sense in which cancer is malignant, there is great difference in the *degree* of malignancy, which the surgeon ought well to understand. Cancer of the breast very often returns in the same part, when removed by the knife; almost always affects the absorbent glands, and the appearance of a similar disease in some internal organ is always apprehended. In cancer of the scrotum, on the other hand, the removal of the diseased part is undertaken with well-grounded confidence that the disease will not reappear in the same place; the absorbent glands are often not affected, and scarcely ever is any similar disease found in the liver or any other internal organ.

"But it seems to me that we want some word for those diseases which *do form a new structure*, capable apparently of contaminating the surrounding parts, so that the removal of the whole of the altered structure is necessary, but which *do not*, as far as I know, produce any contaminating influence upon the absorbent glands, and have no tendency whatever to reappear in a distant and unconnected part of the body. Such a disease is familiar to most surgeons in the skin of the face of elderly persons, and is often, but I think erroneously, called *cancerous* and *malignant*; since, if the new structure at its basis be completely taken away, there need be no apprehension of any return of the disease, either in the same part or elsewhere: or, at least, if the new structure really possesses the nature of *cancer*, it must be clearly understood that the disease is *cancerous* and *malignant* in the very lowest degree. Of this kind also is the disease which I purpose to describe by the recital of a few cases which have fallen under my observation, and which, as far as I know, is not described in any surgical writings.

"The tumour, which I will call the *warty tumour of cicatrices*, makes its appearance in some old scar, many years after the injury which has produced it has been healed, whether a burn, a cut, or a laceration of the skin; and it arises equally from a flogging or a scald, in which the skin alone has been injured, or from a cut or gun-shot wound, which injures also the tendons or bones below the skin, and makes a more complicated cicatrix. There appears in the first place a little wart, or warty tumour, in the cicatrix, which is dry and covered with a thin cuticle, but which soon becomes moist and partially ulcerated, like the warts of mucous membranes, from which a thin, and offensive, and semi-purulent fluid is secreted. In this stage it gives no pain nor inconvenience." (P. 20.)

This first stage is shown in a preparation of a tumour removed in 1826, by Sir B. Brodie, in St. George's Hospital, from a soldier who had been repeatedly flogged. The last punishment, of one thousand lashes, had been inflicted eleven years before his admission. In the cicatrix several warts sprung up, which coalesced to form a tumour. Around this tumour the skin was of a dark livid colour, and studded with several smaller warts. The man easily recovered, and had no return of the disease.

In the second stage of the disease described by the intelligent writer, the growth of the tumour becomes more rapid, the warty appearance being in some measure lost; a more solid substance projecting from the diseased skin, which resembles fungus hæmatodes. The tumour is very vascular, and bleeds when touched.—Case 2d, also of a soldier, from military punishment, affords an example of this second stage. Case 3d, of a woman, from a scald, still further illustrates the same points. Case 4 is one of warty ulcer arising in a cicatrix upon the heel, after a wound through the tendo Achillis. Cases 5, 6, and 7, describe the same diseases from other injuries.

Mr. Hawkins concludes his brief but interesting paper by expressing a hope that the remarks he has made may enable any surgeon to recognize the disease in its early stage, when it may be removed by the knife, without losing time in using remedies, which appear to have no influence over its growth. The excision of the warty ulcer may thus prevent amputation, as in some of the cases related, or prevent the patient from being worn out by a disease that might have been eradicated while its size still allowed of the operation. Again, too, it must be important for the surgeon to know that this disease is of local origin; that it does not contaminate the constitution, so that no mischief is to be feared after its removal.

Mr. HOWSHIP next records "*a Case of Abdominal Tumour; with the Appearances on Dissection.*" In this short communication we do not perceive any points of practical interest that we could convey by the brief abstract to which we are necessarily confined.

Dr. R. LEE relates a case of "*Pulmonary Phlebitis*," as a consequence of uterine phlebitis occurring after labour; "the only example of the disease that has yet fallen under his notice." The case is doubtless of value from its rarity.

The next contribution to the volume, "*Observations on Ulceration of the Cartilages of the Joints, and on Anchylosis*," is from the pen of Mr. HERBERT MAYO. In a paper by Mr. Key, on the Ulcerative Process in Joints, published in the eighteenth volume of the *Medico-Chirurgical Transactions*, two opinions are maintained: 1st, that ulceration of cartilage is more frequently dependent upon inflammation of the synovial membrane than is commonly supposed; 2d, that the inflamed synovial membrane is the agent



by which cartilage is absorbed, or that cartilage is not so organized as to be capable of self-absorption, as the vascular tissues are, but, when appearing to ulcerate, is acted on and taken up either by the capsular synovial membrane, or by a false membrane superadded to the latter, with one or other of which the cartilage is in contact. The first opinion is supported by Mr. Mayo's experience; the second is opposed to the authority of William Hunter and Sir B. Brodie, and is at variance with the facts stated in Mr. Mayo's paper. Mr. Mayo's principal object, however, is not to multiply proofs of vital forces being inherent in cartilages, but to establish certain pathological differences, which he believes to have been overlooked by others, in ulcerative diseases of joints. With this purpose several cases and dissections are described which have fallen under his observation. They tend to show that articular cartilages are liable to three distinct forms of ulceration, which may be occasionally combined, but are oftener met with separately. The cases first described are instances of rapid absorption of cartilage, beginning in its synovial aspect; the new surface, if of cartilage, being smooth and unaltered in structure; if of bone, healthy; the absorption of cartilage being attended with inflammation of the capsular synovial membrane. The second series exemplifies chronic ulceration of cartilage, beginning on its synovial aspect, producing an irregularly excavated surface, with fibrous or brush-like projections of the cartilage and synovial membrane, attended with inflammation of the capsular synovial membrane, and sometimes of the same membrane where it is reflected over the cartilage; the bone, and the surface of cartilage towards it, being healthy. The third set of cases are instances of ulceration of cartilage beginning on the surface towards the bone, attended with inflammation of the adjacent surface of the bone, with inflammation of the synovial membrane, and in some instances with sensible vascularity of the cartilage itself. Mr. Mayo's paper is illustrated by three exceedingly beautiful lithographic drawings. The preparations referred to in the paper, from which the drawings were taken, may be seen in the anatomical museum of King's College.

Mr. W. H. PARTRIDGE's case of "*Singular Laceration of the Peritoneal Coat of the Uterus*," as detected on examination after twin-labour, is worthy perusal. The "postscript" to the paper somewhat diminishes the *singularity* of the case previously related; for the author "has met" (in Velpeau's *Accouchemens*, probably, t. ii., p. 193 et seq., where the very same cases are referred to,) with accounts of two other cases of rupture of the peritoneal coat of the uterus, followed by death.

"*On the Chemical Constitution of Calcareous Tumours of the Uterus, and other Parts.*" By JOHN BOSTOCK, M.D. F.R.S. &c.

From analysis made by Dr. Bostock himself, and others of equal celebrity, the conclusion arises that these earthy concretions, in

whatever part of the body they may be deposited, are nearly similar in the nature of their constituents, although with some variation in their proportions; that, in almost all instances, the phosphate of lime is the predominating substance, while, in certain cases, the carbonate would appear to be the principal ingredient.

*"Observations on Fibro-calcareous Tumours and Polypi of the Uterus."*

By Dr. R. LEE.

Dr. Lee gives a good abstract of his subject from various authorities, and adds somewhat from his own resources. Bayle has described the fibrous tumour of the uterus as fleshy at its commencement, and of a red colour, like muscular fibre, then as becoming cartilaginous, and, in the last stage, osseous. This may be the case with a few examples of the disease, Dr. Lee confesses, but he thinks not generally; and that the greater number of these tumours never exhibit a muscular or fleshy appearance at any period of their existence, but have a fibrous structure, equally distinct when not larger than a pea, and when exceeding in magnitude the head of the human adult.

"Fibrous tumours are developed either in the cellular membrane under the peritoneal coat of the uterus, or between the layers of its muscular or middle coat, or immediately between its middle and mucous coats. When situated between the peritoneum and muscular coat, they give rise to no irritation, hemorrhage, or derangement, either in the uterine functions or general health, and their existence even can only be guessed at during life. But, when they attain a large size, and occupy a great part of the abdominal cavity, they produce all the injurious consequences of enlarged ovaria, from which indeed, during life, they are distinguished with difficulty, and death usually takes place from interrupted circulation and long-continued pressure on the bladder and other contiguous viscera. Retroversion of the uterus and retention of urine have taken place in the latter stages of the disease." (P. 107.)

"There are no symptoms by which we can positively determine, during life, the presence of fibrous tumours situated between the muscular strata of the uterus: they may, however, be suspected to exist in those individuals who, being advanced beyond the middle period of life, suffer habitually from leucorrhœal discharge, who menstruate profusely, and have frequent attacks of menorrhagia, with sense of weight and irritation in the region of the uterus and adjacent organs. No alteration of structure can be discovered in the cervical portion of the uterus; but, when an examination is made, the uterus is felt larger and heavier than natural. The os uteri is neither irregular, indurated, nor painful on pressure, as it is found to be when affected with malignant disease." (P. 112.)

Dupuytren believed that uterine polypi, if abandoned to themselves, ultimately became disorganized by cancer. Dr. Lee doubts the correctness of this opinion, from his own observations; and our own experience quite confirms his scepticism as to its accuracy.

"With respect to the treatment of the various tumours which have

now been described, I have a few observations to offer. Iodine, mercury, and all other remedies, have little effect either in arresting their growth or promoting their absorption. Women who have fibrous tumours formed in the walls of the uterus should avoid mechanical pressure of the hypogastrium, violent bodily exertion, and every other cause which may excite inflammation or a determination of blood to the organs within the pelvis. Where congestion has taken place, it should be removed by local bloodletting, mild cathartics, and anodynes. Profuse uterine hemorrhage should be controlled by rest in the recumbent posture, cold applications to the hypogastrium, and the internal use of the acetate of lead.

"When any of these tumours pass through the os uteri into the vagina, they may be removed by the ligature or by the knife. If the root is soft and slender, the tumour may easily be twisted off by the forceps. In the course of the last twenty years, Dupuytren states that he has removed two hundred uterine polypi by excision. Hemorrhage has only occurred twice in all the cases, and in both instances it was permanently arrested by the tampon. In eight or ten cases, after the application of the ligature, death took place from the absorption of pus into the system.

"Where the root of the tumour is large and vascular, I am of opinion that a ligature should previously be passed around it, at as great a distance from the os uteri as is compatible with the removal of the disease." (P. 132.)

"*Further Remarks on the Ulcerative Process.*" By C. ASTON KEY, Surgeon to Guy's.

We have, in our notice of Mr. Mayo's paper, adverted to the difference of opinion that exists between Mr. Key and that gentleman with respect to the absorption of cartilage. The doctrines which Mr. Key advances in these "Further Remarks" have not made converts of us. He conceives that cartilage has not the power of self-absorption, but that it disappears either by softening or through the action of another surface upon it. The opinions of Dr. Hunter, Sir B. Brodie, and Mr. Mayo are opposed to Mr. Key's; and, although the point is not easy of direct proof, yet we consider the case given in Mr. Mayo's paper in the same volume as decisive. This case is the subject of the first figure in the very beautiful plate attached to Mr. Mayo's paper. It appears by the narrative that in less than three weeks the cartilage had almost entirely disappeared from the astragalus in this instance; that what remained was perfectly healthy, and not softened, and perfectly adherent; and that there was no fluid in the joint, nor false membrane stretched over the articular surfaces: there was nothing, in short, in the joint *to begin the absorption of the cartilage but the cartilage itself*. We will not advert to cases in which the evidence is more ambiguous, but of which we have seen many that we have thought could bear no other construction than that which Mr. Key rejects: but, believing that it is now established that cartilage is capable of self-absorption, we venture to assert that it is more

reasonable to attribute appearances to this principle, which can be explained by it, than to assume another, which is still more difficult of proof, and not more consistent with analogy.

Mr. COCK's "*Remarks on Malformation of the Internal Ear*," and Mr. THURNAN's "*Examination of the Organs of Hearing from the Body of a Boy, at. 13, born Deaf*," require the diagrams by which they are illustrated, to render them intelligible. They are both interesting contributions to a subject of which, confessedly, we have yet much to learn. Mr. Cock remarks, that congenital deafness has been almost universally ascribed to paralysis of the auditory nerves, although there is, he believes, scarcely a case upon record in which the nerve has been found altered in its size or texture, unless through the agency of tubercles, hydatids, or some other cause producing mechanical pressure or lesion of its substance. He has examined, within the last two years, the temporal bones of five children who died in the Deaf and Dumb Asylum; and in two of these he detected such palpable deviations from the normal structure as would indicate that a congenital malformation exists oftener than is generally supposed, and therefore that to this cause many cases of deafness may reasonably be ascribed. We do not pretend to much personal knowledge of this subject; but we must observe, that no malformation of the ear is found upon examination of the majority of persons born deaf, and that it would be safer to attribute the deafness to any other cause than to that which would lead practitioners into utter despair of rendering any service, by any means.

Dr. SEYMOUR relates three cases of *Mental Derangement* successfully treated by the acetate of morphia. The opinion that mental diseases are generally dependent upon inflammation of the brain, and that free bleeding is the proper treatment to be had recourse to, is now abandoned, except by a few routine practitioners, who never move from that degree of professional knowledge at which they quitted their lecture room. Dr. Seymour's views and doctrines are well known, and have been too frequently insisted upon by various authorities to require any additional confirmation.

"*Cases and Observations illustrative of Diagnosis when Adhesions have taken place in the Peritoneum; with Remarks upon some other Morbid Changes of that Membrane.*" By RICHARD BRIGHT, M.D. F.R.S. &c.

Dr. Bright has observed on several occasions, when the circumstances of the disease had rendered it probable that adhesions might take place between the viscera and the peritoneum of the abdomen, that a very peculiar sensation has been communicated to the touch, varying between the crepitation produced by emphysema and the sensation derived from bending new leather in the hand: and, in each of the cases detailed, he found, after death, that such adhesions had existed in the parts where this sensation was discovered; but in no case has he observed the phenomenon and

ascertained that the particular morbid condition did not exist; so that he infers the probability that the same adhesive process had taken place in those cases where no opportunity of examination after death was afforded. As far as we know, Dr. Bright is original in this observation; and we quite agree with him "that it may be of importance to ascertain the existence of such unnatural adhesions, as guiding and modifying not only our prognosis but our practice. At all events, let the actual utility of such information be what it may, according to the present state of our knowledge, whatever symptoms facilitate our obtaining an exact insight into the progress of disease must be satisfactory to the physician, and may hereafter prove beneficial beyond any thing we can at present foresee." Dr. Bright relates seven cases, in most of which, during the progress of abdominal disease, the "crepitus" he mentions was felt during life. The diagnosis that adhesions had taken place was verified by dissection. Mr. Copland Hutchinson relates a case, at the end of Dr. B.'s paper, in confirmation of the existence of the diagnostic symptom adverted to, when adhesions have taken place in the peritoneum.

*"On the Medicinal Properties of Creosote."* By J. ELLIOTSON, M.D. &c.

In the early part of 1834, M. Reichenbach discovered a new principle in pyroligneous acid and all the tars, which he called Creosote, from its property of preserving animal matter: he regarded it as a cure for various diseases. Dr. E. commenced a trial with it at St. Thomas's Hospital, in July, 1834, in cases of phthisis and epilepsy. The medicine proved stimulating. If the first dose exceeded two or three drops, nausea, vomiting, vertigo, headach, and heat of the head, generally followed; but, if the dose was at first only one or two drops, many patients bore a gradual increase of it to six, ten, or twenty, without unpleasant effect. Some patients will not bear more than a fraction of a drop of creosote, while Dr. E. knew one lady who steadily augmented her dose to forty drops before it disagreed with her; but the addition of a single drop beyond this produced extreme giddiness, insensibility, and vomiting, followed by headach for several days. It appears more likely to disagree if not well diluted, though the longer it is given the less dilution frequently is necessary. At first every drop usually requires about half an ounce of water, and few persons can take many drops in much less than half a pint, without experiencing at least considerable heat in the tongue especially, and in the pharynx, cesophagus, and stomach. Dr. E.'s trials with it internally in phthisis "were perfectly unsuccessful." It is no remedy for tubercles; but, where only a single ulcer exists, or but a small number are in the lungs, and there is no disposition to further tubercular formation, it is very useful.

"One young gentleman, with a large solitary cavity in his left lung, has completely recovered, and not the slightest morbid condition is dis-

coverable by the ear. In bronchorrhœa, or that state of the bronchial mucous membrane which consists in a profuse secretion without inflammation, I have seen its inhalation of essential service. In one instance of this affection, in which the expectoration was extremely offensive, the cure was very rapid. In asthma, also, dependent upon morbid excitability of the bronchial membrane, its inhalation is often useful. Even where it agrees perfectly well, the inhalation frequently induces a heat of the tip of the tongue." (P. 221.)

A few epileptic patients for a time had milder fits, and at longer intervals, from this remedy; but, except in one or two instances, the disease returned with its former severity, and sometimes appeared to be aggravated. The tranquillizing effect of creosote in some instances of epilepsy encouraged Dr. E. to try it in neuralgia, hysteria, and extreme nervousness; and in this class of cases it frequently succeeded. In rheumatic neuralgia, not inflammatory, Dr. E. imagines the remedy is most successful. The morbid excitability of nervous persons has been frequently abated by it in a remarkable manner; but in this description of persons, we are advised to begin with no more than half a drop, as occasionally more at first produces excitement of the head. Palpitation depending upon mere morbid excitability of the heart has yielded to it far more than other remedies. The "extraordinary power" which the creosote possesses, of arresting vomiting, when not dependent on inflammation or structural disease, Dr. E. "considers to be perfectly established." During inflammation, the stimulant power of the medicine does harm. If structural disease exists, it aggravates pain, even if it arrest the vomiting. A few persons are so disgusted with the smell of tar, that any attempt to take the creosote makes them sick; but, with these exceptions, Dr. E. "knows no other medicine at all to be compared with it in arresting vomiting." He has often seen it succeed after the failure of prussic acid, the most powerful remedy he was previously acquainted with in such cases. In different cases of vomiting different doses are required. In colic and enteritis, it arrests the vomiting long before the bowels are opened, and purgatives are thus retained which were before rejected. Dr. E. has tried it in only one case of vomiting from pregnancy, and with success. In sea-sickness also it has been found advantageous, but at present upon a small scale. Its power, we are assured, is equally great over nausea. When properly given in cases of nausea or vomiting, without inflammation or structural disease of the stomach, Dr. E. has only known it to fail in one remarkable case, which he relates. Having ascertained this power, experiments were made to determine, whether, like prussic acid, creosote would prevent other medicines from exciting nausea and vomiting. The result is thus confidently expressed:

"I find it, by daily experience, even to surpass prussic acid in this particular. I have enabled the stomach to bear hydriodate of potass, sulphate of copper, sulphate of iron, and many diuretics, &c., in much larger quantities than those previously rejected. Just as I have often

seen it arrest vomiting where prussic acid had failed, so I have seen it enable the stomach to bear medicines when they had been rejected in spite of prussic acid." (P. 230.)

No action is produced upon the bowels by the creosote. It sometimes augments the quantity of urine. Dr. E. once saw it, in doses of a minim three times a day, cause micturition nine times in an hour. In another case, in doses of three minims, it produced severe strangury. In three cases of diabetes, it was thought to do good. Dr. E. speaks favorably, too, of its external application in ulcers that require a stimulus, and in sloughs with offensive discharge. In pruritus podicis, in toothach applied pure, and in porrigo, it has sometimes been found serviceable. Dr. E. adds, in a postscript, that he has witnessed "its extraordinary power over nausea and vomiting in at least fifty more cases, in which the stomach was neither inflamed nor diseased." In two cases of glanders contracted from a glandered horse, "the sedulous injection of a weak solution of creosote up the nostril removed the whole of the symptoms in a few weeks."

So far we have confined ourselves to an abstract of Dr. E.'s warm eulogiums respecting the creosote, but we cannot quit the subject without observing that, in other and equally judicious hands, with all the required conditions present in the cases in which it was given, it has fallen very far short of the virtues ascribed to it in his paper. We sincerely hope that further experience may confirm Dr. E.'s opinions: we fear, nay we believe, it will not; and that, even in those cases—nausea and vomiting, without inflammation or organic disease,—in which he much extols its powers, the result of accumulated evidence will be, that it sometimes succeeds, more frequently fails, and is even occasionally injurious. The creosote is at least not to be trifled with, with impunity, and we caution practitioners in general, from what we know of its effects, to prescribe it with great circumspection.

The case next related is by Dr. ROBERT LEE, "*on the Functions of the Fœtal Kidney.*"

Mr. EARLE'S "*Observations on Fractures of the Bones of the Pelvis*" well merits the attention of surgeons. Five interesting cases are related, all of which occurred in Mr. Earle's public and private practice.

The volume concludes with a paper by Dr. SIMS, of much pathological and practical value, "*on Serous Effusion from the Membranes and into the Ventricles of the Brain, and its Connexion with Apoplexy and other Diseases of the Brain.*"

After having bestowed upon this volume a very attentive perusal, we rise from it with the impression that it is somewhat inferior, upon the whole, to most of the previous "Transactions." Several of the papers contain excellent matter, and are very neatly drawn up; others, upon which we could fix, contain little that is new, and have certainly no fair claim to the space they occupy.

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## PART SECOND.

**Bibliographical Notices.**

ART. I.—*On Bloodletting.* By JAMES WARDROP, M.D., Surgeon to the late King, &c.—London, 1835. Small 8vo. pp. 148.

A TREATISE on our most important therapeutic agent, by a man of Dr. Wardrop's experience and reputation, is especially entitled to careful critical examination; and our notice of this work will be directed rather to any questionable doctrines which we may deem it to contain, than to those which, by their reasonableness, are calculated to win readily golden opinions from the experienced and intelligent, and certainly in preference to any common-place matters which had become the staple of our craft long prior to their appearance in the present publication.

The work is divided into six *Discourses*, and, from its portions being thus designated, it is probable that they were originally delivered as lectures to pupils, which would account for the elementary nature of a considerable part of their contents. The matter of the first discourse, containing physiological and pathological remarks on the blood, is so strictly of this description, that we shall pass it over without comment; but the more peculiar and practical opinions set forth in the second merit attention.

Local bleeding is the principal subject of this division of the work, and on this point Dr. W. entertains opinions which, if they are not especially his own, he certainly develops more distinctly than any preceding writer. The term "local bleeding" he considers strictly applicable only to blood drawn from the set of vessels which are the seat of the morbid affection: so, at least, we interpret the following passage.

"There are few parts of the body from which blood can be abstracted locally, strictly speaking; for blood taken by leeches or by cupping from the integuments covering a diseased organ, must often come from vessels which are not ramifications of, and have no communication with, the vessels of the diseased organ; the superficial and deep-seated vessels, both arteries and veins, being, in most parts of the body, branches from other trunks. Thus, blood taken from any of the branches of the external carotid, as the temporal arteries, for the treatment of diseases of the head, cannot be considered as a local bleeding, from the distant and circuitous connexion which those vessels have with the internal carotids. Neither, for like reasons, can blood, taken from the parietes of the chest or abdomen, be considered as strictly a local bleeding in affections of the thoracic or abdominal viscera. The opening of a vein in the arm abstracts blood more directly from the jugular veins, as well as from the superior and inferior cava, than leeching or cupping the integuments of the temples, forehead, or those of the thorax or abdomen. What, therefore, has usually been considered as a general bleeding is a more local mode of taking away blood for the treatment of the various affections of the brain, and those of the thoracic and abdominal viscera, than that which is usually resorted to, and commonly considered as a local mode of bloodletting.



"Local or 'topical' bleeding, strictly so called," he continues, "can indeed be only employed in a few organs and in a few parts of the body. In the treatment of diseases within the cranium, topical bleeding can be accomplished by taking blood from the frontal vessels or from the ethinoidal vessels, both of which come from the encephalon, and are branches of the internal carotid artery. It may also be taken from the vessels which pass through the mastoid foramen of the temporal bone, the veins communicating directly with the lateral veins, and the artery being a branch of the occipital which goes to the dura mater." (P. 35.)

That the author regards these distinctions as matters of practical moment we shall assume, in the first place because we hold him in much higher estimation than to suppose he would waste his own and his readers' time in mere verbal quibbles, and, moreover because many passages in his work display the importance he attaches to them. The questions at issue are, first, whether a given quantity of blood drawn by what in ordinary language is termed general bleeding has uniformly more influence over an internal phlogosis than the same quantity taken by local bleeding, employing this phrase to designate the drawing of blood from the integuments corresponding to the organ affected, without reference to the sets of blood-vessels supplying the respective parts; and, in the next place, whether the abstraction of blood from the group of vessels whence the inflamed organ is supplied, possesses the decided advantages which Dr. M. ascribes to it over local bleeding performed in the ordinary way, by cupping or leeching the surface over the part affected.

The author's own remarks on general bloodletting tend considerably to settle the first question.

"It is an excellent rule," he says, "and one which I will venture to say will seldom lead to error, always to employ general in preference to local bloodletting, in such cases of local disease or injury as are accompanied with or have created a disturbance of the general system; whereas, local bleeding ought to be employed in preference to general bleeding, when only local symptoms exist, or when only local symptoms remain after the general symptoms have been subdued by previous general bloodletting." (P. 46.) "The same observations," he adds, "may be made on the treatment of every disease, as well as injury, for which bleeding is necessary."

Now it appears to us, that it would have been more consistent with the author's own doctrine to discard local bleeding (general bleeding being the more local thing of the two,) from the treatment of all internal phlogoses, those excepted which are so situated within the cranial cavity as to admit of relief by drawing blood from the Schneiderian membrane, or the integument covering the mastoid process or the frontal bone. In truth, the question is too often treated in the work as if it were one of anatomical research, not of therapeutic observation; and, by floating between the reasoning furnished by the one and the induction from the other, the author is betrayed into inconsistencies. He overlooks what observation has taught us, but what the anatomy of the vascular system does not explain, that in disease there is a connexion—(M. Broussais calls it a sympathy, and we have no objection to this application of the term,)—between the portion of the surface corresponding to certain organs and the organs themselves. This connexion or sympathy is very familiarly exemplified, in cases of internal pain, by the operation of hot flannels, fomentations, rubefacients, epispastics, and (we must add too) of leeches. But, though thus regardless of the principle, derivation, (a

principle of acknowledged importance in therapeutics,) that of revulsion finds more favour with Dr. Wardrop. To illustrate its value, he quotes the case of a lady who had suffered during several months from violent cough, accompanied with difficulty of breathing, for which she had applied leeches to the chest, and used a variety of remedies, without effect. Dr. W., being consulted, recommended the application of four leeches to each foot, "and the relief was so speedy and complete that she required very little further treatment." We believe the two principles, derivation and revulsion, which he appreciates so differently, to be in reality very closely related, and that there is no little inconsistency in this respect for the one and contempt of the other. "Derivation," says old Wiseman, "differs from revulsion only in the measure of the distance and the force of the medicines used: if we draw it to some very remote, or it may be contrary, part, we call that revulsion; if only to some neighbouring place and by gentle means, we call it derivation." Notwithstanding our author's general depreciation of ordinary local bleeding, yet we find him, (p. 89,) in place of venesection, applying four leeches to the region of an hypertrophied heart, and thus "subduing both the unnatural vigour of the pulse and the action of the heart."

On the relative value of what Dr. W. calls *strictly local bleeding*, experience must decide: his own estimate of it is very high. Our experience of it, by the application of leeches to the lining of the nostrils in ophthalmia and cerebral affections, has not been inconsiderable; but, although regarding the practice as a very good one, its efficacy has not made us very warm proselytes to the anatomical principle advocated by the author. The surface is a highly vascular one, and, by the application of one or two leeches there, a large quantity of blood is rapidly procured by the suction and the subsequent flow, and unquestionably more relief is afforded than by the same number of leeches to the integuments of the surface; but we think that the rapidity and freedom with which the blood is obtained pretty well explains this superiority, without reference to the distribution of the vessels whence it is drawn.

Our commentary on the third and fourth discourses, in which general bloodletting is discussed, must partake, we regret to say, of the controversial character which a sense of Dr. Wardrop's influence with the public has hitherto compelled us to assume. He selects, in a passage which we have already had occasion to quote, the constitutional disturbance as his guide to the adoption of this measure,—a view in which we cordially concur; but he subsequently qualifies this safe and sound doctrine by annexing the character of the local pain as an additional ground of decision. The indication of that constitutional affection which, he conceives, uniformly justifies and demands general bleeding is incompressibility of the pulse, and he gives the following rule by which it is to be discerned:

"If, with the point of one finger, the artery be pressed at the wrist, we shall perceive, with another finger applied to the artery beyond and at the distal side of the first finger, that, unless a very considerable degree of pressure be employed, the pulsations of the radial artery will not be entirely destroyed, but the sensation as if of a fine thread or hair will remain." (P. 53.)

All, we believe, who consider this passage, will agree that such an attempt to define the indefinite leaves the question precisely where it was

—in each individual case to be decided by the skill and experience of the practitioner. Were the rule to be acted upon without reference to other circumstances, we apprehend that, in that irritable condition of the system which succeeds hemorrhage, spontaneous or artificial, much mischief might accrue. Laennec's test of the propriety of general bloodletting, though by no means infallible, is infinitely preferable to this.

The expediency of the proceeding being settled, the amount of blood to be drawn is the next subject of consideration. If we are not mistaken in the meaning of our author, his rule on this head is to carry the bleeding in *every case* to syncope; care at the same time being taken, either by the recumbent posture or other means, that the fainting should not occur prematurely; that it should be purely the result of the quantity of blood drawn. We acknowledge that we have experienced considerable difficulty in reaching the author's meaning, and have still perhaps a doubt regarding it. The following passages will probably be thought to furnish some ground of hesitation, and at all events will enable the reader to judge whether we have been successful in interpreting them.

"The state of fainting, which I have already endeavoured to point out as an *warning criterion* for estimating the extent to which blood should be removed in those cases where general bleeding is most expedient, such as inflammatory diseases attended with febrile disturbance, and in congestions affecting the vital organs, is by most practitioners taken as a guide." (P. 72.)

"The state of fainting is to be considered as an *index* of the quantity of blood which is necessary to be removed for the relief of the disease; and, as I have already said, it will always be found that the quantity is in the *ratio* of the propriety and necessity of abstracting it." (P. 73.)

"But for the abstraction of a certain quantity of the sanguineous fluid in the treatment of diseases requiring depletion, fainting ought *not to be considered as an index* of the quantity of blood proper to be withdrawn; but the usual means should be taken to avert its occurrence, except when the patient is in a recumbent posture at the time the venesection is performed. Indeed, when employing bloodletting for the cure of inflammatory diseases, we ought to be particularly cautioned against placing too much confidence in the idea that, if we have bled the patient *ad deliquium*, we have carried the bleeding far enough." (P. 64.)

"It has been laid down as a common rule for the treatment of inflammatory diseases, that blood should be abstracted until syncope is produced, by which we might be led to suppose that the fainting was either a certain token of the quantity of blood that should be taken away, or that it was the act of syncope itself, and not the loss of blood, which was to cure the disease. Hence we often hear of patients being bled until they fainted, as a proof of the vigour of the practice employed, without considering whether the fainting has been produced by excessive depletion or from the particular position of the patient whilst the operation was performed." (P. 63.)

"It is singular how small a quantity of blood some persons can lose: even the very impression on the mind that blood is to be abstracted causes sickness, and fainting comes on after a few ounces of blood have been removed. In such cases, however small the quantity abstracted, there is often a decided relief; the syncope sometimes causing even a permanent subsidence of inflammatory symptoms." (P. 66.)

If our version of these passages is correct, we have no hesitation in saying that, in numerous cases, the adoption of such a rule would produce a waste of blood infinitely worse than useless. We are by no means disposed to advocate a timid practice, always endeavouring to proportion our measures to the exigencies of the case before us, and never stopping the flow of blood till an impression is made on the system; but we should much prefer that this impression were within the limit of syn-

cope than that it attained it. By the adoption of a contrary proceeding, not only in many cases will much more blood be drawn than is requisite, but the necessity for the repetition of venesection will be increased. The degree of reaction which so often occurs after full bleeding has appeared to us to be more general and considerable after complete syncope than where this state has been avoided; whilst, at the same time, the local affection has been aggravated during this secondary excitement: at least, where pain had originally formed a portion of the local symptoms, it has been considerably augmented.

By way of justifying his precepts, Dr. Wardrop gives examples of profuse hemorrhage from various causes, hemorrhoids, rupture of varicose veins, wounds on the field of battle; and he adds,

“Very extraordinary, also, is the quantity of blood that females sometimes lose from the partial separation of the placenta, yet generally without any other bad effect than temporary debility. Women, under such circumstances, have been known to lose several quarts in a few hours. These facts, taken collectively, prove to what an extent blood may be lost without being followed by serious consequences.” (P. 79.)

Our author's practice can receive but little justification, we think, from facts of the nature here stated, for, were we to select the circumstance which inflicts most injury on the female constitution, it would be uterine hemorrhage, from whatsoever cause it may arise; and we totally dissent from the opinion expressed of the innocence of profuse sanguineous evacuations in general. Whatever may be thought of certain other points of doctrine which we have taken the liberty to controvert, here at least we look for a decision from the most experienced parts of the profession in our favour.

It is agreeable, after so much controversy, to turn to passages of the work which present no reasonable ground of objection.

In the sixth Discourse will be found some judicious observations on the abuse of bloodletting in apoplexy, and much sound reasoning on the common inflammation which complicates certain specific diseases,—among others, syphilis. The reader will find, too, in the seventh portion of the work, some, though perhaps not very novel, yet certainly judicious, remarks on the use of bloodletting in ulceration. We did not expect that, at this time of day, the author would have found the following piece of information necessary; but as we gather, from the form of expression employed, that it is required in certain quarters, we transfer it to our pages.

“Reflecting on the effect of depletion in such cases, we find incontrovertible proof that sloughing sores are at least not always to be attributed to a diminished vigour or typhoid state of the system, nor to an increased virulence of the specific virus, but to an excess of inflammation arising from the peculiar state of the system or constitution of the patient. The inflammatory state is to be subdued by an antiphlogistic system of treatment, independent of any subsequent treatment which may be necessary for the cure of the specific disease. Hence, as is well known, in cases where the sore shows a disposition to inflame much or slough, the exhibition of mercury is prejudicial. In the cases to which I allude, besides bloodletting, opium ought to be freely given, and one or more grains may be taken every four hours until the symptoms be relieved.” (P. 142.)

As a summary of our opinion of Dr. Wardrop's treatise, we are compelled to say that it comprises not a little that is of questionable accuracy, and a good deal of common-place, mixed with much judicious and

valuable matter. His talents and experience led us, perhaps, to expect a more philosophic view of the whole question, and that, instead of limiting his researches to the effect of bloodletting on symptoms, he would have endeavoured to ascertain its precise influence over the pathological condition; for in this way only can rules of real value be framed for the application of this, the most heroic of our remedies.

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ART. II.—*Klinische Mittheilungen*, von Dr. F. A. G. BERNDT, Königl. Geheimen Medizinal-Rathe, u. s. f.—*Greifswald*, 1833-4. Heft I. II. *Clinical Communications*, by Dr. F. A. G. BERNDT.—*Greifswald*. Part I. 1833. 8vo. pp. 166. Part II. 1834. 8vo. pp. 195.

DR. BERNDT is the director of the medical and obstetrical *clinic* in the university of Greifswald, and has embodied a part of his experience at that institution in the volumes now before us. We recommend the work to our readers who are German scholars, as a valuable one: we can only find room for a brief analysis of some of the more practical articles contained in it.

The clinical institution at Greifswald consists of a small hospital, with out as well as in patients, many of whom are visited at their own homes, so that it combines what we should call hospital and dispensary practice.

The number of patients treated in it, from 1824 to 1833, was 6,226; of whom, 975 were cases of ague, 613 of bilious fever, and 435 are set down under the head of *status gastrici congestivi*. It is almost a truism to remark that, in summaries of this kind, the numbers set down to the several diseases vary more in consequence of the prevalence of different medical theories, or the unequal diligence of physicians in investigating some forms of disease, than from the morbid influence of climate on habits: thus, in the present registers, we find 266 cases of pneumonia and 116 of bronchitis, but only four of organic disease of the heart. As an instance on the other side of the question, however, we may mention ten cases of poisoning by cheese; an accident constantly recorded by German writers, but quite unknown in Britain.

*Intermittent Fever*. In the chapter on this subject, Dr. Berndt attempts to determine the best method of curing intermittents, and the smallest doses of cinchona or its preparations required for that purpose. He was especially led to the latter investigation by the smallness of the funds placed at his disposal, and tried the two following methods:

1. The one recommended by Trassoni, Torti, Cullen, Thuessins, Mursinna, Nasse, and others, of giving cinchona or quinine a short time before the paroxysm.

2. The method of giving small doses of these remedies during the paroxysm itself.

He gives a table containing the results of fifty-five cases treated by administering a scruple of cinchona an hour before the paroxysms. Of these, thirty were tertians; of which, twenty-three were cured without any return of the paroxysm, and six after one return; one case was not cured. Nineteen were quotidians; of which, four were cured without any return of the paroxysm, and thirteen after one return; two cases were not cured. Six were quartans; and this method failed in all.

This method was equally successful at all times, excepting that, in the

year 1829, relapses were common after this, as well as after every other variety of treatment. It is to be remarked, that a second dose was always given before the expected time of the second paroxysm, so that on the whole two scruples of cinchona were employed.

A second table gives the results of twenty-four cases treated with a single dose of quinine, administered an hour before the paroxysm. Fourteen of these were tertians, and ten quotidians; and, with the exception of one tertian, they were all cured by a single dose; but in every case one paroxysm occurred after the remedy had been taken, so that in this respect the results were not quite so favorable as those of the former table.

A third table gives the results of thirty-five cases treated with a scruple of cinchona three hours before the paroxysm, another scruple two hours before, and another scruple one hour before. The fevers were all quotidian or tertian, one of the latter being a double tertian in a child five years old. The treatment was successful in every case: in sixteen, the fever was immediately checked; in nineteen, it returned once. It may be worth remarking that our author, whose experience in the treatment of intermittents is ample, does not scruple to give these large doses of cinchona to children of four, five, seven, and eight years of age. The patients in this table did not require the set of doses to be repeated: this has occasionally been necessary in our author's practice, but rarely.

The next table contains the results of thirty-nine quotidians and tertians, treated with a scruple of cinchona at the commencement of the paroxysm, a scruple during the middle, and a scruple at the termination. The youngest patient in this table was eight years old, but there were several of twelve, thirteen, and fourteen. The first dose, which was given during the rigor, was often rejected by vomiting, but without any influence on the success of the treatment, as every case was cured without a single return of the paroxysm, nor was any other ill effect produced. This method was only adopted when an emetic had been previously exhibited, and the case was free from complication.

Among nearly a thousand intermittents, only forty-four were of the quartan type: these, however, were very obstinate cases, not only from the well-known severity of this form of ague, but from many of them being cases of long standing, sent to Greifswald from different parts of the province. Dr. Berndt endeavours to cure them without cinchona, believing that this remedy has a tendency to produce the secondary diseases which so often follow quartan ague. His favorite remedy is extract of bellebore, in combination with muriate of ammonia and bitters; and he affirms that, with this treatment, the ague disappears after the third or fourth paroxysm, the cachexia and other bad symptoms disappearing at the same time, without the use of bark. In some few cases this does not take place, and the best thing is to administer the preparations of cinchona with belladonna, as well as the combination just mentioned. The following is our author's favorite prescription:

R. Extr. Hellebori,  
Ammon. Muriat. āā ʒij.  
Ext. Absinthii, ʒj.

Solve in Aquæ Menth. Pip. ʒv. sit dosis coch. j. max. 2<sup>a</sup> q. horâ.

A table of thirteen cases is added, which shows the great value of this remedy in quartan ague.

There was an interesting case of a double quartan occurring in a boy of sixteen, who had already been labouring three years under intermittent fever. One of the fevers was soon cured by the hellebore, but the second was obstinate, and required to be treated with bark and belladonna.

The endermic method was frequently tried, particularly in children; and it was found that intermittents could generally, though not always, be cured by sprinkling quinine on the sore caused by a small blister. The ulceration produced by the drug, however, is so troublesome as to form a strong objection to this mode of treatment.

Salicine, piperine, and prussiate of iron were also tried, and with the following results:

(1.) Twenty-two cases were treated with the prussiate of iron; and, of these, twelve were perfectly cured in three or four days, the patients taking from four to six grains three or four times a day: in ten cases the remedy had no effect.

(2.) Eight cases were treated with piperine, of whom three only were cured; in the other five, the continued exhibition of the remedy had no effect.

(3.) The salicine was given to five patients, in doses of from two to four grains every two hours during the absence of the fever, in tertiana, but without any effect.

*Scarlatina.* The fourth paper in the second volume is on the malignant forms of scarlet fever, with reference to the variety of the cerebral affections accompanying this disease. The practical point upon which Dr. Berndt insists is, that, while scarlet fever may be accompanied by inflammation of the brain, to be treated by bleeding, it may also be accompanied by a specific affection of the brain not depending on inflammation, far less on congestion, as Armstrong would have us suppose. This sort of *narcotism* produced by scarlatina, (*Scharlach-Toxication*,) is chiefly distinguished by the absence of vomiting; the suddenness, great extent, and dark colour of the eruption; the frequent, soft, and often irregular pulse; restlessness; disturbance of the brain. Our author remarks, that chlorine in the south of Germany, and carbonate of ammonia in the north, have been vaunted as infallible specifics against scarlatina, but he had tried them both without profit: for scarlatina, when mild, gets well of itself; when severe, bids defiance to the specifics.

*Hooping-cough.* The fifth paper is on the efficacy of the acetate of morphia, applied in the endermic method, in hooping-cough.

Dr. Berndt seems to have tried most of the remedies which have any repute in the treatment of hooping-cough. He has often given belladonna in different methods, in large doses, and for a long time. In most cases it did nothing, in many its utility was dubious, in a few it diminished the number and violence of the paroxysms. He has made extended experiments with prussic acid, but has seen its use attended with advantage only in recent cases; for, in fully developed hooping-cough, it had no good effect. Nor has he derived any advantage from hyoscyamus, aqua lauro-cerasi, digitalis, stramonium, or conium. Opium, however, has been beneficial towards the end of the disease, when the mucous stage has been protracted. He has tried *assafoetida*,

the preparations of ammonia, musk, valerian, muriatic acid, tincture of cantharides, oxide of zinc, ammoniated copper, and acetate of lead; and is convinced that they are all useful under some circumstances, but have no especial power to cure pertussis. Autenrieth's method, which consists in rubbing-in tartar-emetic ointment, rarely produces an advantage equivalent to the torment inflicted on the child.

Strict antiphlogistic measures, the detraction of blood and administration of calomel, are not more efficacious.

Emetics are superior to any of these remedies, when exhibited with due attention to all existing circumstances.

Dissatisfied, however, with all these medicines, Dr. Berndt determined to try the acetate of morphia in the endermic method, and he details sixteen cases in which it was employed: we will give the first at length.

A stout girl, æt. 8, had suffered from hooping-cough for four weeks, for which she had been treated without advantage. The disease had reached the acme of the convulsive stage, (a violent paroxysm occurring almost every half-hour,) but was free from complication, excepting that blood was sometimes coughed up. It was resolved to exhibit the acetate of morphia endermically, and accordingly a blister, of the size of an eight-groschen piece, (a shilling,) was placed upon the epigastrium. When it had drawn, one grain of acetate of morphia and four of gum arabic were sprinkled upon the spot, and a bit of dry rag was put over it. This was repeated on the 30th of March, and on the 1st, 2d, and 3d of April. Amendment took place, but not very decidedly. On the 4th of April, therefore, a fresh blister was put on, and the dose of morphia was increased on the 5th to a grain and a half. In the course of a few hours symptoms of narcotism came on. The child's face became red and puffed up, the head was heavy and confused, and a state of perfect sopor followed, which lasted more than twelve hours. A profuse perspiration then broke out, and the sopor gave way; but the child still complained of pain, heaviness, and confusion of the head. During the sopor the child had coughed but twice, which had not roused her. The following night she slept soundly, and coughed slightly five times; so that from this time the number of paroxysms was considerably diminished, and their violence had almost entirely disappeared. One grain of the acetate was now sprinkled on the sore every forty-eight hours; and on the 12th of April the hooping-cough was so far quelled that there were only about two paroxysms every twenty-four hours. The fits, too, had entirely lost their convulsive character, so that it was impossible to gainsay the efficacy of the acetate of morphia, though it was not so very striking as some physicians have made it out.

The general result was that, of the sixteen patients, six were attacked with narcotism, and these alone experienced much benefit from the morphia. In ten cases the effects of the remedy were not pushed so far, and of these four obtained a mitigation of the paroxysms, but not a cure. The other six patients derived no benefit from the medicine. Hence it appears that it is certainly possible to relieve the convulsive stage of hooping-cough by morphia pushed till it produces narcotism; but we must pause, says our author, before we can recommend so bold and dangerous a proceeding.

*Diabetes* The last and longest paper in the volume contains the his-



tory of six cases of diabetes mellitus, for the details of which we must refer to the work itself. Two of the cases were permanently relieved; three of the patients were carried off by attacks of acute diseases unconnected with the diabetes, and one sunk under colliquative symptoms after the original affection had nearly disappeared.

The post-mortem appearances in the four fatal cases were not very remarkable. The kidneys were never found diseased, and the parietes of the bladder were thickened in one case only. In two cases the stomach was immensely enlarged, a natural consequence of the enormous quantity of food and drink swallowed.

Dr. Berndt concludes with some observations on the various remedies proposed for the cure of diabetes; we must content ourselves with a few of them.

*Emetics* are excellent palliatives.

*Opium* diminishes the hunger, thirst, and quantity of urine; acetate of morphia is still better, as it does not constipate, yet it is unable to cure the disease.

*Ammoniated copper* checks the formation of sugar, and acts favorably upon the nerves of the stomach. It may be given in this disease in very large doses, such as from ten to sixteen grains a day.

*Animal charcoal* improves the quality of the urine a little.

*Cresote* improves the quality of the urine and diminishes its quantity.

Our author has found, like Rollo and the majority of physicians, that a meat diet is the best. Camphor, alum, phosphorus, balsamic remedies, iodine, bitters, (as aloes, ox-gall, and quassia,) phosphoric acid, sulphuric acid, solution of chlorine, sulphuret of potass, arsenic, mercurial inunction, absorbents, carbonate of ammonia, ethereal animal oil, inunction of oil, baths, carbonate of iron, and iron filings, were all useless.

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ART. III.—*Remarks on the Unity of the Body, as illustrated by some of the more striking Phenomena of Sympathy, both Mental and Corporeal, with a view of enlarging the Grounds and improving the Application of the Constitutional Treatment of Local Diseases.* By GEORGE MACILWAIN, Surgeon to the Finsbury Dispensary.—London, 1836. 8vo. pp. 294.

THE title of this book is a fair epitome of its contents. Mr. Macilwain's object has been to illustrate and enforce the importance of the principle which seemed to John Hunter and Abernethy of so much value—that the whole of the body sympathizes with all its parts. In discussing sympathies, Mr. M. has followed generally John Hunter's plan of describing the more prominent ones without attempting to pursue the enquiry so ably commenced by Whytt, and to which modern physiologists have attached considerable importance,—the influence of the brain and spinal cord in their production. Mr. M. has framed a classification of sympathies rather as a convenient help to memory than as an attempt at a scientific arrangement, which at present he thinks impossible. The first division consists of *Structural Sympathies*, or of parts possessing a similar structure; including "sympathies of mechanical relation," as disordered action of the heart producing hepatic congestion; the second division is founded on identity or analogy of function, or *Functional Sympathies*,

as between the uterus and mammary glands; the third division is that of *Intermediate Sympathies*, as when the stomach sympathizes with the uterus through the medium of the nervous system; a fourth includes *Anomalous Sympathies*, so often found connected with the digestive organs, and which will not fall under the other heads, such as potatoes in one individual invariably producing a paroxysm of pain in the bladder. The sympathies of the brain, including the mental sympathies, are separately considered. Each of these general divisions is illustrated by examples. This arrangement wholly fails in the simple object it professes, of assisting the memory; as it obscures the whole subject by breaking it up into so many parts that repetition is unavoidable. Thus, to instance sympathies of the mucous membrane of the alimentary canal under the structural division, allusion is made to the sympathy of the stomach with other portions of the canal, and of these with the bronchial mucous membrane, and that lining the nose, with the skin, &c.; of the urethra and conjunctiva in gonorrhœa and others: in the functional division all this is repeated; and under the head "*Intermediate Sympathy*," that sympathy between the stomach and lungs which gives rise to "*stomach cough*" is placed, from a supposition that it is brought about by the intermediate agency of the skin. Had Mr. Macilwain contented himself with fully describing under one division the sympathies of each organ, as he has done that of the brain, he would have avoided this needless repetition, and would have been in the same proportion clearer. The separation of a few sympathies under the title of "*Intermediate*" is particularly objectionable, as it is far from improbable that all sympathies are intermediate, that they all take place through the medium of the brain and spinal marrow. Even if this exclusive view is not adopted, yet still a much larger number of sympathies than are classed under this head can be explained most satisfactorily by the above theory.

The illustrations of Mr. Macilwain are not intended to include all the sympathies, but merely the more prominent ones. They bear the marks of considerable reflection, and attention to the subject. General statements however are too often substituted for particular facts, which are so much more calculated to make an impression.

From the consideration of the different sympathies Mr. Macilwain passes to their application to the elucidation of the causes of disease. The larger number of diseases (he says,) are produced by the application of cold and moisture: the normal effect of this is reaction; but, when this fails to take place, either from the state of the individual or the long continued application of the agents, there is a sense of chilliness: if this is allowed to continue, the reaction which ordinarily takes place in the skin is succeeded by one analogous in some other part, and generally in some one with which the skin sympathizes, or which has been previously diseased, or weakened.

"Now, that this is sympathy, the remedies which are successful, as well as the history of disease, alike demonstrate. Say that the primary affection of the skin produces an affection of the throat; what is it but an increased vascular action, *analogous* to that which should have taken place on the skin? The patient applies a warm stocking to his throat, gets into a warm bed, and often rises in the morning nearly or quite well."

"Should the part which sympathizes with the skin be previously disordered, the

sympathetic excitement is much more serious; if the part thus sympathetically attacked be previously diseased, or should the general health have been previously disturbed, the consequences are frequently fatal. Persons having a disposition to bronchitis, illustrate the former position; chronic disease of the larynx, or tuberculated lung, the latter." (P. 131.)

It frequently happens that different results take place in the same individual from the same cause. Mr. Macilwain thinks that this is to be explained by the different conditions of the nervous system, "because we can conceive no other source through which external influences make any impression at all:" and he further supposes that these differences depend greatly on two causes almost peculiar to man in his civilized condition—depressing and exciting moral causes, and disorders of the stomach; the former being in direct connexion with the nervous system, and the latter being intimately related to it. Whilst other organs which may originate disease "are in a comparatively natural state, as to external influences, having seldom to counteract any to which they are not necessarily or naturally exposed; the digestive organs, on the contrary, are subject to every possible variety of adaptation of function, from factitious causes of derangement; so numerous, and so varied, as to be alike but in one feature, that they are generally contrary to nature and to common sense." (P. 148.)

"Not content with satisfying the suggestions of nature, by one kind of food, every meal often becomes the occasion of factitious stimulation. Sometimes by variety of condiments; sometimes by direct stimuli. Does excitement produce weakness, the jaded organ is stimulated anew. If the ingenuity of the epicure, or the power of the gourmand, fail, medicine too often lends its aid as a *soi-disant* votary of science to the general work of excitement; and tonics, cordials, dinner pills, and a variety of ministrings to the fatigued sensualist, lull those healthy cautions which the sensations of nature suggest, and sustain for a little a transitory enjoyment, only more surely to complete a functional derangement which luxury had begun." (P. 147.)

The particular application of these views of sympathy to treatment, which Mr. Macilwain especially dwells on, is, that in numerous instances in attempting to cure disease we can effect our aim by directing our attention and remedies to the organs which sympathize with the one primarily diseased, particularly when more direct measures have failed or are unadvisable. Details of treatment in accordance with this principle are not given, but, from a few cases of patients with various nervous symptoms, and disorder of the general health, we find that Mr. Macilwain's practice is to ensure regularity of the functions of the chylopoietic viscera, to diminish their labour, and to avoid disturbances by great attention to diet, warm water clysters, and such simple means; and acting on the skin by gentle diaphoretics, warm clothing and vapour baths. In one case of extensively ulcerated leg, the urine was generally thick, although the appetite was good, bowels regular, &c. "I now said to the pupil (for this was a patient of the Dispensary,) just act a little on her kidney, and see the effect on the leg; but let her omit all her other medicine, and only take a diuretic." The whole ulcer was cicatrized in a week. In another case where strumous ophthalmia was attended with extreme intolerance of light, which had resisted the usual constitutional treatment and counter-irritants, this symptom yielded to a plaster with tartarized antimony applied to the epigastrium.

This kind of treatment, which Mr. M. calls "working by the sympathies," has, we thoroughly believe, the high recommendation of being the usual practice of all judicious practitioners, and we here probably differ from Mr. Macilwain, who evidently believes he has more originality than we can give him credit for. As far as we can decide from our own observation of the general practice of well-educated men, the importance of attending to constitutional treatment in all diseases seems to be duly recognized, although all may not carry their views of sympathy to so great an extent as Mr. Macilwain, or even be aware they are working by the sympathies at all when using the same means. Mr. Macilwain attaches an undue importance to his theoretical explanations of disease; cautious theories which explain satisfactorily, according to the actual state of pathology, any series of phenomena, are not to be undervalued, but they should be held loosely. The little relative importance of such explanations, when compared with the faithful observations of facts, is strongly exemplified in the writings of Sydenham. His histories of disease, and the treatment recommended, will continue to be valuable as long as medicine is studied; whilst the theories of the causes of the same diseases, and the explanations of the effects of the remedies, the product of the same man, are now worthless.

Mr. Macilwain has not the pen of a ready writer: his style is turgid and parenthetical, the sentences are occasionally of extraordinary length, and the words often appear to be selected for the same reason; his arguments, too, are diffuse and involved. On these accounts, the results of much reflection fail to make their due impression, and "plain things are inflated into marvels." The leading principle which he has endeavoured to inculcate, the unity of the body, is usefully enforced at the present time, when the local changes of disease are perhaps studied with too exclusive an attention.

An introductory lecture to a course of surgery concludes the volume: it contains much useful advice to students, and a just tribute of praise to Abernethy.

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ART. IV.—*Statistical Inquiry into the present State of the Medical Charities of Ireland: with Suggestions for a Medical Poor-Law, by which they may be rendered much more extensively efficient.* By DENIS PHELAN, Surgeon to the Co. Tipperary Gaol.—*Dublin, 1835.* 8vo. pp. 325.

THE objects of the medical institutions of a country are the public good, which they either promote directly, by healing the sick and restoring them to their functions in society, or more remotely, by extending and advancing science. Whether, with all the means at their disposal, they answer the great purposes of their existence, is a question equally deserving the attention of an enlightened government and of the medical profession; particularly when any extension of their application or any organic change in their regulation is contemplated. To solve this question,—to show the wants of the sick poor in Ireland,—the extent, the abuses, the inefficiency of her medical charities, and the means of remedy,—the Statistical Inquiry before us is a valuable document: it

shows, on the one hand, the frequent sickness and wretchedness of an impoverished people, arrested at a stage of half-civilization; on the other, the institutions intended for their amelioration often wasting and misusing the stock of good at their disposal. Notwithstanding, however, the gloomy picture of the Irish poor drawn by Mr. Phelan, and fully borne out by the Irish Poor-law Commissioners, their present condition is really better than that of their forefathers, and they are exposed to no more privations, famines, or diseases, than other families of mankind in the same stage of civilization. But why is Ireland left so far behind England? Why does the general mass of her people still grovel in the wretchedness of the feudal ages of Europe? The profuseness of riches, the refined civilization, the princely mansions, of part of her population, shed but a sadder light over the comfortless huts of the peasant.\* To remedy some of the more pressing evils, Mr. Phelan proposes a scheme of poor-laws. The limits of this article only permit us to present a condensed notice of the actual state of the Irish medical charities.

The condition of the sick poor in the epidemic or endemic fevers produced, and perhaps become hereditary, among these ill-fed, crowded, unhappy people, surpasses conception. In the epidemic of 1827-8-9, scenes like the following were familiar to the medical men in many parts of Ireland.

"In the autumn of 1828," says the medical officer of a dispensary, "fever raged with extreme violence: there being no asylum whatever, temporary huts were erected by the friends of the sick, into many of which whole families were put, consisting of from five to twelve individuals. These huts were composed of the most wretched materials, and the interior (about ten feet by six) beggars all description. Many were lost in these places for want of proper ventilation, and from an accumulation of every kind of filth: comforts we only know by name, even to a drink of whey. The result of my attendance on these squalid abodes of wretchedness was that I took fever, of which I recovered with difficulty." (P. 142.) "Dr. Jacob, of Maryborough, says, 'No idea can be formed of the extent of destitution among the labouring classes. \* \* While we have unfortunate wretches *literally dying in ditches* when seized with fever or other diseases apprehended to be contagious, we must admit that this country is only in a state of half-civilization.'" (P. 296-7.)

Let us turn from the patients to the institutions for their relief.

It is greatly to be regretted that, where the sources of charity are scanty, they should be inefficiently directed; and in Ireland we fear this has been the case. No public documents exist by which the number or the expenditure of the public medical institutions can be ascertained, although the government may have procured such a return, as the greater part of them receive public aid. Mr. Phelan, however, has collected from Parliamentary Reports and his own enquiries the following account, which he considers an approximation to the truth. (P. 2.)

\* "Children are often found dead under suspicious circumstances." (P. 49.) "The custom of supporting their parents is decaying fast." "Being always at home, the daughter-in-law is apt to find her husband's father in the way, and you will see the old man cowering in the corner of the chimney, as if he was endeavouring to hide himself from her." (P. 230.) "The aged labourer is driven to mendicancy, and the gentry never give to beggars. High walls surround their demesnes, and a dog is kept at the gates to prevent the entrance of a beggar." See First Report from his Majesty's Commissioners for Enquiring into the Condition of the Poorer Classes in Ireland. 8th July, 1835.

Dublin Hospitals, (exclusive of several Lying-in Hospitals and Ophthalmic Institutions lately established	Number.	Expend.
County and other provincial Infirmeries	38	£28,701
Fever Hospitals, including three in Dublin	64	26,426
Dispensaries	528	13,607
District Lunatic Asylums	11	60,000
		22,965
Total annual expenditure	648	£151,699

This does not include £10,000 (probably) expended on medical attendance in workhouses; nor the funds raised by subscription for dispensaries, &c., amounting to not less than £14,000.

The sources whence this expenditure is supplied are:

Treasury grants to county infirmeries	£ 2,653
Annual parliamentary grants to the Dublin hospitals	14,374
County presentments	82,839
Subscriptions and donations	39,078
Petit sessions and other fines	1,742
Produce of property attached to several hospitals	23,225
Total	£163,911

The medical institutions of Dublin admitted about 135,000 patients in 1833; and, as the population of Dublin, and of the country five miles round, is about 315,000, it is inferred that the proportion of persons relieved, compared with the population, is nearly double as great in Dublin as in London. The Dublin hospitals contain about 685 beds, or one bed to 564 persons; the Irish provincial infirmeries contain but 1,262 beds, or one bed for every 5,827 of the population of Ireland, exclusive of Dublin. The total infirmary accommodation in all Ireland is therefore 1,947 beds, which is in the proportion of one bed to every 4000 of the population.

The Dublin hospitals (of the infirmary class) admitted 7,114 in-patients in one year; of these, 4,795 were residents of the city and a circle of about five miles round it; the remaining 2,319 came from beyond that distance; several from the more remote counties. There was, then, one hospital in-patient for every 66 inhabitants, on an average of three years' returns, (1825, 1828, 1832;) all the Irish *county* infirmeries admitted 78,461 in-patients annually, and the others, belonging to cities and towns, 2,104; in all, 9,950 in-patients in one year; a proportion of one to 746 of the total population. The 2,319 received in the Dublin hospitals make a total of 12,269 in-patients relieved annually in the Irish infirmeries; 1-608th of the population. Only 36 out of 266 towns and cities in Ireland, of more than 1000 inhabitants, have infirmeries. Mr. Phelan concludes that Ireland, which is in greater need of hospitals than England, is less adequately supplied.

*Fever Hospitals.* It is stated, in an official work by Dr. Barker and Dr. Cheyne, that, during the epidemic fever which prevailed two years and a half (1816-18) in Ireland, a million and a half, or a fourth of the population, were attacked, and 65,000 died. At this time seventy-two fever hospitals were established in different parts of the kingdom. Mr. Phelan thinks that, in ordinary seasons, 108,000 cases of fever occur annually; 15,000 of which find accommodation in the hospitals.

"Fever," he says, "has been seldom less prevalent than in the three years ending 1831; yet, during these years, the Cork-street and Hardwicke Fever Hospitals in Dublin, and the fever wards of the new Meath Hospital, admitted 5,702 fever patients annually, giving a proportion of one to 66½ of the whole population of the city and county of Dublin, from which alone, with so few exceptions as scarcely to deserve notice, there were sent 61,516."

*Dispensaries* are very numerous, but inefficient: in the county of Down there is only one to a population of 35,000.

The manner in which the infirmaries are supported, managed, and supplied with medical advice in Ireland, deserves examination, and in many cases revision. In England it is well known that all the hospitals, except St. Bartholomew's and St. Thomas's, were founded by private individuals; are principally supported by annual subscriptions, except Guy's; and are under the management of officers chosen by the subscribers: in Ireland, on the contrary, the infirmaries were founded by Act of Parliament, and are supported by treasury or parliamentary grants and county presentments; the subscriptions constituting less than a fourth of the entire revenues.

*History of Infirmaries in Ireland, from Acts of Parliament.* The 5 and 6 Geo. III. (of the Irish Parliaments) made provision for the erection and establishment of one infirmary in each county in Ireland; for the management of which the Primate, the Lord Chancellor, the bishops of the diocese, and the rector or vicar of the parish, with donors of twenty guineas and annual subscribers of three guineas, form a perpetual corporation. Dublin graduates in medicine and surgery are declared to be alone eligible to the offices of physicians and surgeons. The sum of 100*l.* a year is ordered to be paid to each infirmary surgeon by the public treasury; and grand juries are authorized to present from 50*l.* to 100*l.* a year on each county, for the use of its infirmary. The 45 Geo. III. enabled grand juries to present 600*l.* a year on each county for the infirmary, and first made provision for the establishment of dispensaries in Ireland. The 46 Geo. III. provides for the inspection of infirmaries. The 54 Geo. III. enabled grand juries to present an additional sum of 100*l.* a year, to be paid the surgeon of each infirmary; it prohibited all annual subscribers from voting unless two years' subscription had previously been paid, and authorizes governors to establish, if they think proper, a second infirmary in the county; in which case, the salaries of the surgeon (200*l.*) and apothecary (30*l.*) were to be equally divided. Successive Acts of Parliament provided for the establishment of fever hospitals, lunatic asylums, and dispensaries. Only eight or ten houses of industry exist in Ireland, although facilities have been afforded for their establishment. (Pp. 20-32.)

Mr. Phelan candidly admits that the medical officers of the county infirmaries are well qualified for their office, and that these institutions do great service to Ireland; but he maintains that they do not afford *efficient* medical aid to his sick countrymen, and are marred by several defects—not to use a harsher term. These are principally defects in the Acts of Parliament, and in the regulations of the local governors, and may be briefly summed up under the following heads. (P. 42.)

1st. Inconvenience of the sites originally chosen for many of the county infirmaries. They were fixed at the assize towns, which, like Wexford, are sometimes at the outer boundary of the population; and

this very much impedes their usefulness. In twelve counties and a half, 4,161 patients entered their respective infirmaries in one year; a population of about 500,000, residing within five miles of the infirmaries, supplied 2,200 of the patients, while the remaining population of 2,600,000 souls furnished but 1,886 patients. The districts contiguous to the hospitals obtained infirmary accommodation for one in 234 of the population; the remoter districts only for one in 1,416.

2d. Vesting the power of establishing a second hospital in each county in the governors of the one first erected. Since this power was given, it has only been exerted once, although much called for.

3d. Giving a monopoly to Irish practitioners *who graduate in Dublin*; whereas, three graduate in Great Britain for one who obtains a degree in Dublin.

4th. The mode of raising the funds, which is inadequate and injurious: for the 700*l.* raised by presentment, and 92*l.* obtained from the treasury, often suffice to carry on the machinery of the institution, and no exertions are made to obtain subscriptions. In 1828, the whole amount of donations, subscriptions, petit-session fines, and other contingencies, in twenty-nine counties, only amounted to 1,973*l.*; on an average, 68*l.* from the nobility, gentry, magistrates, and clergymen of each county. The treasury grants and county presentments were to the amount of 17,022*l.* In King's County, having a population of 144,000, where there are 166 magistrates, about thirty protestant rectors, and thirty catholic priests, besides private gentlemen, there were, on an average of three years, only three life-governors and six annual subscribers. The annual expenditure of the infirmary was 695*l.*

5th. The want of efficient control over institutions supported by public grants: the returns are mockeries.

6th. The annual subscription of three guineas, required for qualifying governors, is too high. Patients cannot obtain recommendations. There are only *two governors* in Galway, although the population amounts to 30,000.

7th. The governors meet very rarely, as they are few, and often absentees.

8th. There being no resident surgeon, and only one medical officer, generally in full practice, attached to each infirmary, the patients are often neglected, and other medical men are excluded.

9th. There is no efficient provision for relieving out-patients at their own houses; which is particularly felt, as there are no parish medical attendants in Ireland.

10th. Surgeons reside at ten hospitals, but in some cases they appear to monopolize, to a very considerable extent, the space which should be allotted to the sick. Mr. Phelan discovered that, in the Kildare Infirmary, which is much too small for the county, the surgeon occupied rooms capable of holding fifteen beds; at Down, the resident surgeon takes up the space of twenty-four beds; and at another place this officer actually has apartments capable of containing forty-eight patients, besides "two stables, two coach-houses, harness-room, barn, and several other offices." He also enjoys his full salary of 192*l.* annually, in the "poor country of Ireland."

11th. The treasurer has too much power at the elections. Up to 1833,



subscribers could only vote at the end of two years; but donors of twenty guineas possessed the right of voting immediately on paying their donations. The treasurer alone at an election knows how many pay their donations. Drs. A. and B. are candidates, both willing to purchase the office by making governors. A. gains the treasurer; he ascertains that there are forty votes, and has only a promise of eighteen, which are made a majority by giving the treasurer an order for 120 guineas, to make six donors, as well as power over a sufficient sum to make at all events one more than B. No catholic holds the situation of physician or surgeon to a county infirmary in Ireland.

The elaborate tables at the end of the volume have been compiled with great care, and the materials from which they were deduced must have been collected with great expense. The author not only addressed circulars to the different institutions in Ireland, but corresponded with several gentlemen best acquainted with similar institutions in England. On the whole, the statistical department of Mr. Phelan's work is executed with great ability, and makes us hope that the government will avail themselves of Mr. Phelan's assistance in any system they may propose for the regulation of the Irish medical charities.

The parts of the work referring to the London medical institutions contain several errors; more excusable as, when Mr. Phelan was writing, no accurate information existed on the subject.

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ART. V.—*Elémens de Chimie*. Par E. MITSCHERLICH, Professeur de Chimie à Berlin, &c. Traduits de l'Allemand sur la dernière Edition, par M. B. VALERIUS, de l'Université de Gand.—*Bruxelles*, 1835-6. Tom. I. and II. 8vo. pp. 415, 296.

WE were greatly interested by the announcement for publication of a Treatise on Chemistry by Professor Mitscherlich, of Berlin. His reputation as an able and popular teacher, his celebrity as an exact and philosophic chemist, and, above all, the estimation in which he is universally held as an original discoverer in some of the profoundest branches of the science, excited a curiosity, and raised in us expectations, which we have never in the same degree experienced upon any previous occasion. A rapid perusal of the first two volumes of his "*Elémens*," even though in the disadvantageous garb of a French translation, (not always, we fear, very faithfully made,) has more than justified the anticipations in which we ventured to indulge; and, gratified as we have been by the instructive and perspicuous manner in which he has handled topics of an elementary nature, we cannot but look forward with increased interest to the completion of a work which will disclose to us, in the words of the author, his matured views in reference to the doctrines of Isomorphism, or the relation which subsists between the chemical constitution and the crystalline forms of bodies.

In the preface prefixed to the second volume, the plan of the work is very clearly explained, and a brief account given of the contents of the different volumes, which, including the two already published, will altogether amount to five. Upon the unpublished volumes we are, of course, not in a predicament to make any critical observations, and shall therefore merely state that the third will be devoted to the metals, their com-

binations, and those compounds of organic origin important in a theoretical point of view; the fourth, to the doctrines of combination in definite proportions, and the discussion of those branches of mechanical science, such as Crystallography, Heat, Light, Electricity, and Magnetism, the knowledge of which is so essential to the modern chemist; while the fifth will present a recapitulation of the general results dispersed through the preceding volumes, a development of the relations of chemistry to the other sciences and the arts, and an abridged history of the successive steps by which it has reached to its present comparatively perfect state.

As respects the scope of his *Elements*, our author describes himself as composing a *Manual for Students*, not a *System* professing to include all the known facts of chemistry. Such an undertaking as the latter he justly considers as in a great measure superfluous, since the publication of the French edition of his great work by Berzelius. The plan which he pursues has been dictated, he alleges, by a desire to facilitate the business of instruction. It is materially different from that generally employed by British chemists, who, as is well known, before proceeding to the detail of chemical facts, are in the habit of giving a view of the general laws deduced from these facts, and to which reciprocally the facts may for explanation be referred. This synthetic method, alone admissible in the exacter sciences, is, he contends, inapplicable to chemistry; for "it is impossible that he who has not seen the phenomena can form a clear idea of the science itself, of the parts into which it is divided, and of the laws and general results to which the study of it conducts. Thus, one cannot form a clear conception, for example, of chemical affinity, of chemical combinations and decompositions, of the solid, the liquid, and the gaseous state of bodies, without first witnessing the phenomena from whence these facts are deduced. The method, therefore, of treating chemistry which is at once the most easy and the most perfect, consists in performing before the pupil experiments, by means of which he can create the science himself, and be rendered attentive to phenomena, to their explanation and connexion with each other, without ever building upon facts which he has neither seen and explained, or which he cannot see immediately."

In the general justice of these remarks there are, we believe, few who will not concur. But, while our author feels strongly, and expresses clearly, the objections to the mode usually pursued, he would appear to overlook, or at least to keep in the back-ground, difficulties of no trifling magnitude, by which the method he himself adopts is beset. If the chemical student be introduced at once to phenomena, with the view of his creating from them a science, he will, we fear, be frequently found incompetent to the task, and, after having loaded his memory with a mass of facts which to him appear without order, connexion, or explanation, will abandon in despair a study which has none of the attractions of a science, and would appear to require of its cultivator almost superhuman powers of memory. We have no hesitation in giving it as our decided opinion, founded on experience, that the purely analytic method here advocated is not that by which a knowledge of chemistry is most rapidly conveyed. We consider a brief explanation of the laws which regulate chemical combination to be an indispensable preliminary to the

practical parts of the course; and, though a perfect demonstration of these laws to the mere beginner is a thing scarcely to be accomplished, should we succeed in impressing mere results upon his mind, his progress will be greatly facilitated; for, in the various phenomena with which he will subsequently be engaged, he will find but exemplifications and confirmations of some general principles with which he is already furnished. Our author himself, constrained (we presume) by the necessity of the case, commences his second volume with a brief exposition of the laws which govern the combination of bodies, both by volume and by weight, and thus bears, as it were, unwilling testimony in favour of the method against which he has so ably argued.

The first of the volumes before us includes the history of the non-metallic elements, and of the various compounds which result from their mutual union, with the exception of those possessed of an acid nature, and concludes with two very able and original articles (as far as respects the manner in which the subjects are handled,) upon Atmospheric Air and Water, under both of which a variety of the most interesting discussions are introduced. In the second the subject of the ordinary acids is examined, under the head of the Oxacids and Hydracids; the former being arranged according as they include a simple or a compound radicle; after which occurs a succinct, but at the same time very clear, account of a variety of other compounds constituted in a very different manner, but possessed of the same electro-negative virtues. If we omit some obvious errors of the press or the translator, there is scarcely any thing in these volumes which does not meet with our unqualified approbation. The experiments are simple, conclusive, and described with such remarkable clearness and precision as to admit of easy repetition by the student. The apparatus also employed, even when of the least complicated kind, is always illustrated by a plate; a circumstance of the utmost importance to him who, unable to attend in the laboratory of an analytic chemist, is compelled to derive all his information from books. But the characteristic feature of the work, and that which confers upon it its highest value, is the detailed exposition it contains both of the physical and chemical phenomena which present themselves in each experiment, and the frequent incidental application of the demonstrated laws of chemistry to the explanation of various phenomena and processes in manufactures and the arts. This union of chemical and mechanical science renders the knowledge conveyed as complete as possible; while an occasional exemplification of their value in the creation of individual and national wealth cannot fail to awaken the curiosity and sustain the interest of those who do not value science so much for its own sake as for the important practical purposes to which it may be turned.

We have, however, not exhausted our commendations of the *Elémens* of Professor Mitscherlich. His work is not a mere well-digested summary of the generally known facts and theories of chemistry: it includes the results of recent very important researches of his own, which, though they may have appeared in some of the continental periodicals, are but very imperfectly known in this country, not having as yet found their way into our class-books and standard works. Of this description are, in particular, his observations on the theory of the production of æther. This remarkable fluid, it is well known, is usually obtained by distilling

a mixture of equal weights of oil of vitriol and rectified spirit, and is purified by agitation with water containing a little caustic potash, and rectification from dry chloride of calcium. Now, chemical analysis having long since established that æther may be represented by  $C^4H^6 + H^1$ , and alcohol by  $C^4H^6 + 2H^1$ , it was natural to conclude that the oil of vitriol, in virtue of its affinity for water, deprived the alcohol of  $1H^1$ , and thus converted it into æther. This was accordingly the theory first proposed, and it was for a considerable time generally adopted. When, however, it was ascertained that the spirit and oil of vitriol, when mixed, gave rise to a peculiar acid, (the sulphurinic,) and that, during the distillation of the æther, two other products are formed, the heavy and the light oil of wine, this simple theory obviously required modification. A modification it has accordingly undergone;\* but, when this is accurately considered, the function of the oil of vitriol, as far as respects the development of æther, is still in effect considered to be the removal of water from the alcohol. Now, these views are contested by our author, on the following conclusive grounds: 1. That acid containing two atoms of water is more efficacious than oil of vitriol, which contains but one. 2. That, when absolute alcohol is brought in a continuous stream in contact with such acid, its influx being so regulated that the temperature may continue permanently at  $282^\circ$ , it is almost entirely converted into æther; and with this there distils over the exact amount of water which the alcohol must have lost in the process. These facts require little comment: they fully disprove the common theory; for, if this were true, the acid should be efficacious in proportion to its strength, and the water extracted from the alcohol, instead of passing off with the æther, should obviously be detained in the still or retort.

But, if sulphuric acid does not act by its affinity for water, what is its *modus operandi*? To this interrogatory Mitscherlich replies, that it is a case of *decomposition by contact*; or that, as peroxide of manganese resolves peroxide of hydrogen into water and hydrogen gas, so alcohol, in the presence of oil of vitriol, is decomposed into water and æther, the acid at the same time undergoing no change whatever.

Such is a brief sketch of one very original and valuable passage in the first volume; and several others of a similar character will be detected by the attentive reader. In fact, one of the great merits of the work would appear to consist in the circumstance of every disputed topic having been submitted by the eminent author to a rigorous experimental examination. Ingenious and novel methods of analysis are everywhere interspersed throughout the work, and, by means of their chemical problems, are satisfactorily solved, (*ex.gr.* the composition of hyponitrous acid,) which are altogether untouched by ordinary chemical writers.

We conclude these observations by strongly recommending Professor Mitscherlich's book, not only to students but to adepts in the science; and expressing a conviction, arising from the specimen before us, that, when completed, it will constitute one of the most instructive and fascinating digests of chemical knowledge which has as yet been presented to the public.

\* Berzelius, *Traité de Chimie*, tome vi. p. 494.

ART. VI.—*Illustrations of the Comparative Anatomy of the Nervous System.* By JOSEPH SWAN.—Part I. 4to. pp. 27. London, 1835.

THIS is one of those works which are much wanted in the English language. The amazing strides which have been made in the knowledge of comparative anatomy by our continental brethren have opened such a field of practical information, that we have been surprised that so few of our own countrymen have directed their attention to this subject. It was the wonder of the great Cuvier, when he visited England, that the treasures in comparative anatomy which this country possesses in the museum of John Hunter, should have been so long unknown, and almost forgotten. Indeed, many of those subjects which had been fully understood and exemplified by dissections by that illustrious anatomist, owing to the comparatively little attention that has been paid to this branch of study in England, have only become known to us through the labours of foreigners. Works, therefore, of the description which Mr. Swan has undertaken, illustrative of the various structures of the body in different classes of the animal kingdom, are not only desirable, but absolutely necessary, in the present state of our knowledge.

The work before us (of which, however, we have only the first part,) is well calculated, to a certain extent, to forward the object it professes to illustrate, viz. a knowledge of the anatomy of the nervous system in different animals. We must, however, in the outset, take the liberty of finding a little fault with the arrangement which Mr. Swan has chosen to adopt; for, although the work will convey to the student a knowledge of individual structures, it can give him but little idea of their *comparative* anatomy, since this depends upon such an arrangement of the subject as will illustrate the gradual and progressive development of structure from the simplest to the highest forms. The author remarks in his preface that, after much consideration, he had selected "such examples as would explain the scheme on which the nervous system is generally founded;" but we are of opinion that this object will not be forwarded by the arrangement he has chosen. Instead of commencing with the higher Crustacea, in which the nervous system, after having passed through many phases, has acquired a concentrated and high form of development, it would have been better if he had begun with its lowest condition, and gradually ascended through the different classes of animals, showing the principal links and connexions in the series. This would have made the work far more useful than it will now be found, although the excellent plates, being as they are from actual dissection, cannot fail to be highly serviceable. We perfectly agree with the author that actual dissections should be encouraged, and it is with this feeling that we would strongly recommend his work as a valuable collection of dissections. There are a few points more important than the arrangement, upon which we must say a word or two.

We have been much disappointed with regard to the quantity of letter-press which accompanies these beautiful plates, there being scarcely more than the most meager description of the objects represented. In the first five plates there is an entire absence of letters for reference, and description of the particular parts of the objects, by which alone they could be recognized. This most decidedly is a fault. It is only the junior

student, or the student who has advanced but to a certain extent, who can be materially assisted by these delineations of structure in the invertebrata; and to these it is more particularly necessary that the objects should be distinctly and accurately represented and described.

The most important qualifications of an anatomical writer are precision and accuracy of description, and fidelity of representation. If these be wanting, however beautiful a work may appear, it ultimately becomes comparatively useless; because, when a student begins to discover, as he advances in information, that that on which he had reposed the most implicit reliance, and perhaps had consulted upon every occasion, contains inaccuracies and errors, he is disposed for a time to disregard it entirely; and it is only when he has arrived at a full knowledge of this subject, and is enabled to distinguish its merits from its imperfections, that he will again turn to it with satisfaction and pleasure. We are sorry to be obliged to notice a few inaccuracies of this kind in the present work, both in the plates themselves and in the letter-press which accompanies them. These are confined chiefly to the structures of invertebrata, with which Mr. Swan evidently is not so well acquainted as with those of the higher animals. We were not a little surprised at finding him mistaking the very principles of development upon which the nervous system is founded. He seems to have adopted the opinion of Ackermann, Reil, and some of the older anatomists, that the sympathetic of the vertebrata is the analogue of the whole nervous system of the invertebrata. At first we could scarcely believe that so able and experienced an anatomist as Mr. Swan should have so completely misunderstood the subject; but we give his own words.

"The different appearance of the nerves encircling the œsophagus, and forming a connexion between the brain and first ganglion in invertebrated animals, can sustain only a very slight claim to a comparison with that between the brain and spinal marrow of the vertebrated. If any other be allowable, it is with the par vagum of those animals, in which the sympathetic nerve becomes so combined with the ganglia of the dorsal nerves as not to admit of a separation. These compound ganglia terminate after the usual manner of the dorsal nerves in the muscles and skin, except that some of them send branches to the viscera. If, therefore, the spinal cord were removed, and the ganglia with the prolongations of each side were drawn together, through the connexion of the par vagum with the brain, a nervous chord similar to that of many invertebrated animals would be produced. This would be a different combination; but it might be well suited to the lower degree of the animal. It may not be necessary in these creatures for the nerves of sensation and motion to be separate, but it may suffice to have a chord of a mixed character, and capable of conferring both qualities, as in the glosso-pharyngeal nerve in man, the par vagum, and some others." (P. 19.)

"In the human fœtus, the sympathetic as well as the spinal nerves and their ganglia are formed at an early period, and when very little more is apparent than the membranes of the spinal marrow. This circumstance favours the opinion, that the long chord of invertebrated animals is not the prototype of the spinal marrow, but of the spinal ganglia and their nerves, the sympathetic and par vagum, according to the preceding observations." (P. 20.)

We are the more astonished at the expression of this opinion by Mr. Swan, who has been so long engaged upon these structures, after the complete identity of the nervous chords of articulata, and the brain and ganglia of mollusca, with the cerebro-spinal system of man and the higher animals, has been so fully made out by such authorities as Meckel, Cuvier, Blumenbach, Gall, Spurzheim, Serres, Rudolphi, and Weber,

and still more recently by Müller, Treviranus, and others. Even Mr. Swan himself seems half inclined to take a similar view of the subject, notwithstanding his expressed opinion, when he tells us that the cerebral and œsophageal ganglia of the invertebrata can bear only a very slight comparison with the cerebro-spinal system of vertebrata. But to compare the whole nervous system of the lower animals with the par vagum system only of the higher is truly absurd. Had our author taken the trouble to refer to Müller's paper on the Sympathetic System of Insects in the fourteenth vol. of the Physico-Medical Transactions of Bonn, or to the more recently published paper of Mr. Newport on the Sphinx Ligustri, in the Philosophical Transactions for 1834, he would at once have seen that the analogy between the spinal column, vagus, and sympathetic systems of man and the higher animals, and the corresponding parts of the nervous system in invertebrata, is distinctly identified. The existence of distinct motor and sensitive tracts in invertebrata is also questioned, although it is more than once stated that there is a difference in the appearance of the dorsal and ventral surfaces of the chords in the lobster; that "there is a ganglion inserted into the ventral, and a layer of longitudinal fibres passing over the dorsal," and a tolerable representation of these is given in the plates of the lobster. We think that Mr. Swan ought at least to have done justice to those among his countrymen who have preceded him in publication, and to have made some reference to the paper of Mr. Newport above alluded to, in which these parts are particularly described and delineated. Of the correctness of the facts there stated he might have assured himself by examining the original preparation, which is deposited, we believe, in the Museum of the College of Surgeons.

Another fact appears also to have presented much difficulty to Mr. Swan, which a better acquaintance with the structures of invertebrated animals would have entirely removed. It is the insertion of the ganglia into the abdominal chords. These ganglia were long ago conceived by Treviranus and E. H. Weber to be analogous to the intervertebral ganglia of the spinal cord of vertebrata, and this, as Müller has recently remarked,\* the observations of Mr. Newport upon the cerebro-spinal chords of Insects and Crustacea have almost proved.

Passing over some minor errors of delineation, there are certain inaccuracies and omissions in the description and representation of the nervous system of the Centipede which we cannot omit to notice. In this animal, besides the brain and first subœsophageal ganglia, which encircle the œsophagus, there are two double cords, united at certain distances by ganglia, which, as in the lobster, are inserted into their ventral surface. Besides these, there is a small band of nervous matter which extends along the median line above the cords, but lying close to them, from the head to the anus, and just above each ganglion it gives off a few filaments which join with the nerves that proceed from the sensitive and motor columns beneath it. This latter cord, which is very easily observed, is not represented in Mr. Swan's delineation of the Centipede, nor is even its existence alluded to in the letter-press. This is the more remarkable since it has not only been noticed by several authors, and has been minutely

\* *Archiv. für Anat.* Jahrgang. 1835. No. I. p. 81 et seq.

delineated in the paper just referred to, by Mr. Newport, but has even been noticed by Mr. Swan himself in the second vol. of the Medical Gazette, for September 27, 1834, p. 317; from which it is clear that he is acquainted with the existence and structure of a part possessing peculiar interest to the physiologist.

Having thus noticed its errors, we turn with much satisfaction, to advert to the great merits and beauties of this publication. The sixth and seventh plates, which represent the sympathetic and spinal nerves of the cod-fish (*Gadus morrhua*), are beyond all praise. Here Mr. Swan is completely master of his subject, and he has performed his task with the greatest ability. The sympathetic nerve and its origin are beautifully shown; its course beneath the branches of the fifth, its junction with the gastric branch of the vagus, its anastomoses around the large blood-vessels, its course on each side of the spinal artery, and its distribution to the spermatic vessels, all evince the labours of the most masterly anatomist. The seventh plate exhibits several anatomical details of great importance. In it the fifth pair of nerves, besides being distributed to the head, are shown to communicate with all the organs of locomotion, the jugular, pectoral, dorsal, ventral, abdominal and caudal fins. Before the nerve is distributed to these parts, it is joined by a branch of the vagus, while the vagus sends two other branches immediately beneath the skin along the sides of the body to the tail, one of them passing along the back, and the other along the abdomen. This is a most interesting distribution, but that of the spinal nerves is still more so.

"Each anterior and posterior bundle, issuing from the spinal chord, is divided into two branches. One branch from the anterior bundle is joined by one from the posterior, and passes forward to the muscles and skin on the anterior part of the spine; the other branch of the anterior bundle, after it has communicated with the posterior branch passing forward, passes backward and is joined by the second of the next posterior bundle, to terminate on the muscles and skin on the posterior part of the spine. Neither of the branches of the posterior bundle forms a ganglion. The same disposition of the spinal nerves is continued to within a short distance from the tail, when the whole of each anterior and posterior bundle becomes joined, and the division into branches for the muscles and skin, on the anterior and posterior parts of the spine, takes place. The spinal marrow terminates in a bulb near the tail. The great simplicity of combination of the spinal nerves of the cod proves that the anterior bundles are not for exciting one set of muscles, and the posterior their antagonists, as it is clearly demonstrated that one portion of the anterior supplies the muscles on the anterior part of the body, and the other those on the posterior. As ganglia are not attached to the posterior bundles, it is clear that these bodies are not an indispensable adjunct to the nerves of sensation." (P. 25.)

We have ourselves noticed a nearly similar distribution of the spinal nerves in the great shark (*Squalus maximus*.) In this animal, one of the highest of the cartilaginous fishes, there are indeed some very slight enlargements upon the posterior roots, but these in some instances are so indistinct as to lead us to doubt whether they ought really to be considered as ganglia. We know of no class of vertebrated animals besides fishes in which the ganglia of the posterior roots are wanting, and hence it becomes difficult to understand why in this class alone they are absent. It is well remarked by Mr. Swan that the simplicity of combination in the spinal nerves of the cod proves that the anterior bundles are not for exciting one set of muscles, and the posterior their antagonists, thus



negatively confirming the already fully established views of Bell, Magendie, and others, that these two sets are, one for motion and the other for sensation. We cannot quite agree with our author in his views with regard to the functions of the fifth nerve, and its independence of the will of the animal, when influenced by external impressions; nor with some other theoretical views advanced in different parts of the work. But these are matters which only a careful exposition of the anatomy of similar structures in different classes of animals, together with experiments very accurately made and repeated, can decide.

We look forward to the completion of this work with great interest. It is one that was much wanted, and, notwithstanding some defects, is very valuable. In the execution of its plates we know of none with which it may be compared, excepting the already published work by Mr. Swan himself upon the nerves of the human body, a work which reflects honour not only on the author but on our country.

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ART. VII.—*The Anatomy of the Regions interested in Surgical Operations performed upon the Human Body; with occasional Views of the Pathological Conditions which render the Interference of the Surgeon necessary. In a Series of Plates the size of life.* By J. LEBAUDY, M.D. Parts I. II. III.—London, 1835. Fol.

WE always feel a degree of apprehension upon the announcement of a system of anatomical plates. This mode of teaching the science of anatomy is, we suspect, as frequently the means of evil as of good. The capability of having the parts of study comfortably laid upon the table ready dissected on clean white paper—all the disagreeables and labours of the dissecting room escaped, offers temptations of no small force to the mind of many a "walker of the hospitals." The absolute impossibility of acquiring correct anatomical knowledge from plates, be they ever so good, is, one might suppose, so self-evident, that, did we not hear the contrary gravely asserted, not only by the uninformed public, but by those whose education ought to have taught them better, we might deem all observations of ours superfluous; but knowing, as we do, that it is by no means an uncommon thing for a student to trust very far too much to these helps, we feel it to be our duty to lift the friendly voice of warning. What is it that the surgeon finds essentially requisite in the practice of his profession?—An operation of any difficulty cannot be performed without an accurate knowledge not only of the course and position of the blood-vessels and nerves, but of the relative position, size, depth from the surface, and appearance not only of each organ in the vicinity, but of each structure and tissue. He should also be familiar with the appearance and *feel*, not only of the parts in one individual, but of the same parts as varied by disease or natural formation. Anatomy is as much a science of the touch as of the sight. How is the picture-taught surgeon to judge of the difference between the artery and the nerve? to obviate the possibility of his tying one for the other? How is he to distinguish and recognize the succession of parts brought into view at every stage of almost every operation of importance? The knowledge afforded even by the most practised eye is here often insufficient, without the assistance of that which the frequent habit of handling the dead body has procured. It is, however, the abuse of these helps

which we deprecate, not their use. To the practitioner in the country they afford valuable assistance; they refresh the memory on points which time has effaced, and which he has no opportunity of reviving by actual examination; and this is almost the only use to which we could desire them to be applied, a use, we fear, far too low in the scale of importance for the expectations of their authors. The foregoing observations are of course not applicable to plates intended to illustrate pathology. The utility of these no one can dispute; but even here it would be well if the proper design and object of such representations were better understood and acted on. We should not then have mathematical figures cut out of a diseased organ which nothing but an implicit reliance upon the veracity of the author could have induced us to believe an approach to reality. Even the best efforts of the pencil can but feebly represent the infinite variety of appearance and of colouring which we meet with in disease: what then is the value of a more feeble attempt at its representation? It can only mislead in the exact ratio of its want of accuracy. A want of truth, or truth only half told, in a pathological plate, is in some respect more unpardonable than in anatomy, because the variety of natural structure is such that an anatomical figure can only pretend to represent a *manner* of formation, which may in many minor points be found to differ in almost every subject: and this being understood, we are not implicitly led astray by a slight error; we examine and dissect for ourselves, and obtain the general truth from the numberless particulars we meet with. A representation of disease, on the contrary, is a history of discovery, and every such history is not a mere *manner*, but a matter of fact, to a certain degree isolated and distinct from all others of the kind, and as such to be represented with the most scrupulous accuracy, inasmuch as it claims to be our pilot and guide in unravelling the intricacies of disease.

As a mere series of plates, we admire the execution of M. Lebaudy's work both for clearness and accuracy, and they would for this reason form valuable illustrations for a good and complete manual of operative surgery; but the extreme meagerness of the text is such as greatly to injure the value of the work, and to give the author the character rather of a book-maker than of a practical surgeon. To the advanced student the observations on each plate are useless, for want of completeness of description; and to the practitioner they are equally useless, from a similar meagerness in the practical part. We confess that we feel sorry to see such able specimens of art thrown away by being yoked to such an unequal match in the matter of the description. Should the author find, as we anticipate, that the public will not award to his labours the recompense which he no doubt looks for, let him be assured that, if the only valuable part of his present work, the plates, were incorporated into a standard system of operative surgery, (and we grieve to say that in our own language such a work at present does not exist,) he would confer a boon of great value on the profession, and place the labours of his scalpel and his pencil in the rank which they deserve to hold in surgical literature. The author has injudiciously added to the expense of his work by introducing among his plates two on pathological subjects, not at all connected with the rest, or with the object professed in the commencement of the work. They are beautiful delineations of the particular subjects which they represent, and are therefore worse than lost by being thus misplaced.

ART. VIII.—*Guy's Hospital Reports*. No. II. April, 1836. Edited by G. H. BARLOW, M.A. Trin. Coll. Cam., Inceptor Candidate of the Royal College of Physicians; and J. P. BABINGTON, M.A. Trin. Coll. Cam., Member of the Royal College of Surgeons. 8vo. pp. 225. London.

*St. Thomas's Hospital Reports*. By JOHN F. SOUTH, Assistant Surgeon. No. II. and III. January, 1836. 8vo. pp. 117 and 116. London.

WE have already stated the general objects and nature of these "Reports," which indeed their titles sufficiently indicate, and may now, without any formal prefatory remarks, give an abstract of the principal contents of the numbers before us. The minuter details we must necessarily avoid; the practical conclusions to be drawn from the various papers will direct the attention of our readers to the originals, and to these we principally limit our notice.

Mr. Bransby Cooper first relates three interesting cases of complicated fracture, which involve the very important question for surgical consideration, of when it may be right to attempt to save a limb; and when the limb is to be sacrificed to preserve life. In the first case, notwithstanding great laceration of the soft parts and other complicated injuries, the favourable constitution and temperament of the patient induced Mr. Cooper to attempt to save a limb which in a less happily disposed patient might have been unjustifiable. The patient left the hospital with every chance of completely regaining the use of her leg, and her general health was unimpaired. In the second case, immediate removal of the limb was demanded from the feeble powers of the patient. The third case was of an unusual character,—dislocation of the wrist with fracture of the radius. The ulnar artery too was torn through, an accident generally considered to indicate the necessity of amputation; but, observes Mr. Cooper, "it should be remembered that the free anastomosis of the vessels of the hand places this region of the upper extremity under the most favorable circumstances for reparation, and therefore the laceration of one of its principal trunks is not of the same importance as in other parts of the body: even the foot does not offer an analogous condition of circulation: for here the posterior tibial artery performs so much more important a duty than the anterior, that its division is infinitely more serious than when either the ulnar or radial arteries are lacerated, either of which are equally capable of sustaining the vitality of the hand."

Case 4.—*Wounded Knee Joint*.—This is an interesting case and one extremely creditable to Mr. Cooper. The patient was cured. The means employed were free bleeding, nauseating doses of antimony; the application of a splint to ensure perfect quietude of the limb, this being a very important feature in the management of such cases. Mr. Cooper believes that local irritants have not been sufficiently tried in such cases and advises large blisters. Tepid are preferred to cold lotions. Two other cases, with good engravings, are given by Mr. C. of retention of urine from fungus of the bladder, and enlargement of the prostate gland, and also a case of femoral hernia.

The next communication is from Dr. Hodgkin, whose talents and acquirements are well known to the profession. It is entitled "The history of an unusually formed placenta, and imperfect fœtus, and of similar examples of monstrous productions, with an account of the

placenta and fœtus, by Sir Astley Cooper." Three engravings illustrate this paper. In reference to this case, Sir B. Brodie states in a letter to Sir Astley Cooper, that in 1809 he published an account of the dissection of a fœtus without a heart, and in which he believed that the circulation of the blood was carried on by the agency of the vessels only. Dr. Young afterwards suggested that the circulation in a fœtus of this kind is maintained by the heart of the twin fœtus with which such a monster is uniformly associated. Sir Benjamin was convinced by the argument of Dr. Young, and the dissection of Sir Astley Cooper proves the accuracy of his conclusions.

"The history of a compound fracture of the Patella, in a Letter from Mr. Lawrence, of Brighton, to Sir Astley Cooper," affords a gratifying proof of Mr. L.'s skilful management. In three months from the receipt of the injury, the patient was able to walk with a stick. "In looking over the report, the absence of swelling and inflammation, and the slight pain after so severe an injury, deserve notice. This may be attributed to the manner of applying the cold lotion. A trough containing the lotion was placed over the limb, from which hung several threads of worsted, acting as capillary syphons, and conducting as much of the lotion as was necessary to keep constantly wet a piece of thin linen laid upon the affected part: thus subduing the heat and inflammation by the uniform and constant evaporation produced." This plan of treating inflammations has been particularly advocated by MM. Josse, of Amiens, in a recent work, which will be noticed in our next number. It was introduced into the Brighton Hospital by Mr. E. Furner, the house surgeon. We have often seen a similar one employed at the Middlesex Hospital, and we cannot refrain from directing the attention of our readers to it, many of whom, like ourselves, must doubtless have had occasion to lament, that in both medical and surgical cases, the nurse or attendant generally makes the "cold" cloths a little warm with her hands, that they may suit her ideas of comfort for the patient.

The two next papers are by Mr. Key, and scarcely admit of condensation. The first is "Cases of accidents occurring to the large joints; and disease requiring removal by operation:" the second, "A case in which excision of the elbow joint was performed." They are very interesting, and sustain the high reputation of their distinguished author.

Mr. Blackburn's "Essay on the excision of diseased joints, read before the pupil's physical society," although highly creditable to its author, is hardly suited to a publication like the present.

Dr. Ashwell next offers some remarks "on the propriety of inducing premature labour in pregnancy complicated with tumour." Five cases are related, and are illustrated by four engravings. Dr. Ashwell's opinions upon this subject well deserve the attention of the accoucheur. The sixth case "Presentation of the arm, with small and deformed pelvis" is very interesting. In such instances, too, *the pelvic deformity having been ascertained* by the result of previous labours, Dr. A. thinks that "premature labour artificially induced, is the treatment for such contraction and deformity." The conjugate diameter of the pelvis was not quite two inches, ten lines. Dr. Ashwell's arguments in favour of the original practice he recommends are, to our minds, cogent. Accident led him to form his conclusions. In a case of tumour within the pelvis,

he unintentionally separated the membranes, in making an examination, sufficiently extensively to induce premature labour—the best remedy, perhaps, for the complication. The recovery was good. A second case of this kind also occurred. Dr. A. says that to establish the propriety of inducing premature labour in such unfortunate and not very uncommon cases it is necessary to prove certain positions. That *when death occurs* after a labour so complicated the result is *only slightly, if at all referrible to the uterus*, which rarely sustains any serious injury, but is mainly produced by *inflammation, softening, and unhealthy sup-puration* in the growth itself, and rapid sinking. That the pressure and contusion inflicted upon the morbid growth by the unyielding gravid uterus induces inflammation, suppuration, &c. which may be presented by the practice now first recommended, and which he believes deserves to be followed, for by it he may avoid the changes of a mischievous kind likely to be produced in the tumour during the last months of gestation, and certainly evading those greater dangers attendant upon parturition. Hitherto the management of such cases has been a subject of great doubt even with the most skilful and experienced practitioners.

The "Cases and Observations illustrative of Renal Disease, accompanied with the secretion of albuminous Urine, by Dr. BRIGHT," are of much pathological value. Dr. B. states that that particular form of diseased structure of the kidney called "mottling, white degeneration," &c. is very common and very fatal. "I believe I speak within bounds, when I state that not less than five hundred die of it annually in London alone."

The second number of the Reports concludes with a "tabular view of the morbid appearances occurring in one hundred cases in connexion with albuminous urine, by Dr. Bright," and "Cases of Exostosis of the bones of the Face, disease of the Cranium, and fractures of the frontal and parietal bones requiring Operation, by Mr. Morgan."

The first paper of the second number of the St. Thomas's Hospital Reports we have already briefly noticed. In the second communication by Mr. South, of "Imperforate Anus successfully treated," we have an instance of that rare kind of malformation, in which no anus exists, but a small aperture in front of the scrotum through which fæculent matter passes. Mr. South performed an operation by which the most distressing consequences were removed.

The next paper is entitled "Simple Fracture of the Leg followed by Gangrene," by Mr. Green. Amputation performed by Mr. South. In the clinical observations by Mr. Green, the delicate surgical question is discussed, whether it is proper to amputate a limb when incipient gangrene is present. The patient died, but as far as we can judge, all was done that the limited power of man could do to secure a more fortunate result.

Dr. Roots's case of "Chronic Gastritis," offers nothing peculiar in itself, but affords Dr. R. the opportunity of making some apposite clinical remarks.

"Vomiting connected with Hysteria," reported by Mr. F. Le Gros Clarke. Creosote in one or two minim doses failed. After taking three minims the patient did not vomit for a long time. Dr. Roots in his remarks says that "the subsidence of the irritability of the stomach quite satisfied

me that the complaint could not be of an inflammatory nature, because I never yet saw creosote taken into the stomach where was existing any thing like inflammation, but that it either produced an increase of the vomiting, or an increase of pain and heat in the stomach speedily after being taken."\* A less experienced practitioner than Dr. Roots might easily have inferred the existence of inflammation from the tenderness on pressure at the epigastrium, abdomen and thorax. This symptom, however, was of an hysterical character, and depending merely upon that morbid sensibility of the sentient extremities of the superficial nerves which is so common in these cases, and so constantly mistaken and maltreated, to the destruction of the patient. If there is any practical subject more worthy the attention of a young physician than another, it is that of the wandering and often severe pains that attend "hysteria," and which, although temporarily relieved by bleeding, rarely require such means at all. Dr. Roots confesses that he has not the unlimited confidence in creosote, even in simple irritability of the stomach, that his colleague, Dr. Elliotson, reposes in it. He "has used creosote and failed; he has used it and succeeded." The doubts we have expressed, as to the never-failing virtues of creosote, in our notice of Dr. E.'s paper, are thus confirmed.

The cases of "Strangulated umbilical hernia," by Mr. Travers, offer no opportunity for comment. In a case of "strangulated inguinal hernia," there are several points worth attention. There was, first, resistance to the collapse and return of the intestine into the belly, after a dilatation free enough to admit the finger with perfect ease into the cavity. In cases of this kind, Blancard adopted the practice of puncturing in several places the protruded gut, to render it flaccid. By some, even in modern times, this practice has been followed, but Mr. Travers altogether disapproves of it. "It is dangerous and never can be called for in any possible emergency." The second point refers to the treatment after the operation, principally to the administration of purgatives and mercurials, which Mr. Travers condemns, and we are sure very justly, notwithstanding the high authority by which it is so unaccountably supported. Another excellent practical paper by Mr. Travers "On Perineal Abscess, and Extravasation of Urine, arising from Stricture, Fistula, &c." concludes the number. The two following cases are very important.

"A lady had a recto-vaginal fistula, through which the feculent matter was continually passing. She was a delicate married person, with a young family, and suffered exceeding distress of mind, for reasons which may be readily conceived; and feeling that her person would become disgusting and her life valueless if this affliction continued, she consulted a surgeon of eminence, and implored him to devise some means of cure, stating her perfect willingness to endure whatever operation was necessary to that end. He reflected that the principle on which preternatural orifices or communications between canals are brought to heal, is that of rest; that we succeed in the cure of fistula in ano by suspending the habitual contraction and dilatation to which the parts are subject; and that this is followed by a healing process, if there be power in the system to effect it. He therefore suggested the free division of the sphincter ani, thinking it might possibly be followed by success. The patient most readily consented to the operation, and in the course of a few weeks was per-

\* Dr. Roots's remark is confirmed by Dr. Elliotson. Vide our notice of his paper in the *Med. Chir. Trans.* p. 169.—*Rev.*

fectly cured, and remains so to this day. The other case, not less ingenious, was devised and accomplished by an old pupil of this hospital, who brought the patient to me for examination. There was a free communication between the bladder and vagina; of course on the anterior wall of the vagina. The large opening had been seared and stimulated, and the catheter worn; in short, all methods were tried in vain. What do you think this gentleman suggested? He asked her if she would submit to lie on her face for a couple of years. You will see at once what was the intention and effect of this posture. She consented, and in eighteen months was perfectly cured. An ugly puckering and knitting of the parts together, and some shortening of the passage has taken place during the healing; so that I think there would be great danger of a lesion of the cicatrix, if she were again to be with child; but the effect of continued rest in that position, to prevent the passage of urine through the opening, was to allow of such a cohesion of the parts that not a drop escaped, and the cure was established."—(P. 235.)

The third number of St. Thomas's Reports, we are compelled, by want of room, to pass over for the present. The following are the titles of the papers which it contains:—On Porrigio Lupinosa, and Hysterical Paralysis, by Dr. Roots. Compound Dislocation of the Clavicle, backwards, by Mr. Tyrrell. Chronic Dysentery, by Dr. Roots. Diseases of Joints, Mr. Tyrrell. Idiopathic Erysipelas treated with wine, Dr. Williams. Encysted Tumour—diffused Tuberculation, Mr. Travers.

Both of these publications maintain the high character they set out with, their contents being equally creditable to the authors and to the schools to which they belong. We must, however, repeat our wish that all our metropolitan hospitals would unite in the support of one more general and comprehensive publication.

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ART. IX.—*System der Chirurgie*. Von P. F. VON WALTHER, Doctor der Philosophie, Medicin und Chirurgie, Öffentl. Ordentl. Lehrer in der Medic. Facultät der Ludwig Maximilians Universität, &c. &c. &c. Berlin, 1833. Erster Band. Seite 418.

*System of Surgery*, by P. F. VON WALTHER. 1st vol. pp. 418. Berlin, 1833.

THIS production of Von Walther, a professor and teacher of clinical surgery at Bamberg, Landshut, Bonn, and now at Munich, for upwards of thirty years, well known too by various surgical and physiological productions, more particularly the Journal of Surgery and Ophthalmology, edited since 1820, in conjunction with Graefe, will hereafter give the means of estimating the present state of the theory and practice of surgery as taught in the schools of Germany. The present volume is the first of a very comprehensive system, in which surgical diseases are to be treated of as they occur in various organs and regions of the body. At the same time, it is complete in itself; inasmuch as it embraces a consideration of general surgical pathology and therapeutics, presenting, in this respect, the same relation to special surgery, as a treatise on general to descriptive anatomy.

Professor Von Walther spares no trouble in proving his sense of the importance of his subject matter, by demonstrating that the distinction between physic and surgery in point of truly scientific value is factitious, having its origin neither in physiology nor in general pathology and therapeutics, but arising solely from circumstances connected either

with peculiarities in practice or the artificial states of society. To use his own language :—

"The various forms in which disease presents itself constitute an immense series, throughout the whole extent of which there is no discontinuity, the amount of diversity which eludes observation between individual members of the series only becoming discernible when we contrast with each other its extremes.

"Thus, on the one hand, there are diseases, the essential character of which consists simply in injuries or imperfections succeeded by consequences purely physical and mechanical in their nature and effects. On the other, we meet with maladies which consist primarily in modifications of the vital powers,—in functional disturbances without any preceding physical abnormal changes, and which, originating in the very sources of vitality, speedily extend their influence over entire systems of organs or even the œconomy at large.

"It is on this apparent opposition that rests the distinction of diseases into surgical and medical, being the consequence of attaching undue importance to one set of circumstances to the exclusion of others, or even of an over estimate of the relative value of points which are still more subordinate." (P. 3.)

"Medicine and surgery are neither independent of the other in nature or in practice, the separation established between them being purely artificial; each in its present condition comprises a portion of the doctrines of pathology and practice, which are only to be rendered complete by the junction and intimate union of both." (P. 11.)

This imperfect and fragmentary state of surgery, as viewed in an isolated shape, affords a ready and sufficient explanation of the difficulties that present themselves in the way of all endeavours to arrive at a natural, and at the same time useful, classification of the objects which it embraces.

That such difficulties have been felt by surgical writers is sufficiently evinced by the extent of the differences displayed in this particular; which may, however, be referred to the greater or less predominance of one or other of two leading objects;—on the one hand, the desire to attain a completely natural or logical arrangement,—on the other, the sacrifice of all such views, to the great end of simplicity and practical utility.

Thus, adverting only to the writers of modern times, some, as Richter, Sabatier, and perhaps without exception all English authors, have classed surgical maladies according to the regions of the body affected; with the necessary addition of some precursory considerations on those more general, which are common to all parts of the system. Others, on the contrary, have adopted modes of arrangement, varying according as they are based on the presumed natural relations of different forms of disease, (Richerand, Chelius;) or, as some single circumstance or set of circumstances is assumed as the key to a more artificial distribution (Callisen, Boyer).

The method of Von Walther is of the latter kind, all surgical affections being divided among five classes arbitrarily assumed, viz.

1. Inflammation, with its terminations and results. (*Phlogosis*.)
2. Wounds, solution of continuity. (*Trauma*.)
3. Changes of situation. (*Ectopia*.)
4. Defects in form, mechanically producing disturbance of function and deformity. (*Pseudomorphia*.)
5. Foreign bodies, whether penetrating from without, or originating within the body. (*Allothesis*.)



"The second, third, and fourth of these classes belong without dispute to surgery, and constitute its mechanical portion; whilst the first and fifth may be viewed as debatable ground, and have for their object what is called medical surgery." (P. 13.)

As in most other instances where the attempt is made to classify a very extensive collection of very diversified objects, the success of the endeavour is but partial, and leaves much room for criticism. Setting aside, however, difficulties that may be considered inevitable, we cannot but think that in some parts at least, Professor Walther's arrangement, at the same time that it wants the compensating quality of utility, needlessly sets at defiance all consideration of the true relations of the objects included in it.

This remark is not applicable to the first three classes, which are indeed at the same time so rational and so practical that it would be difficult to amend them. But in the fourth we find, not merely arranged together, but indiscriminately intermixed, affections the most dissimilar in their origin and nature.

For example, in the fourth class (*Pseudomorphia*,) we find included, on the one hand, various forms of congenital malformation, e. g. fissures in the middle line, atresia, synechia, excess and defect of parts;—and, on the other, aneurism, varix, distortions, and similar affections, which are to be viewed, not so much in the light of independent and clearly defined maladies, as of remote and by no means essential consequences of pathological changes occurring subsequent to birth, and the due appreciation of which forms the only satisfactory basis of classification.

The same neglect of the actual relations offered by the objects ranked together is not less obvious in the fifth class (*Allentthesis*;) in which, an agreement in the solitary fact of want of conformity to the original composition of the body forms the only ground for embracing under one head a long list of diseases confusedly and disadvantageously mixed together. In this latter instance, too, the error becomes the more striking as it evinces the neglect of grounds of subdivision resting on essential differences, and affording the opportunity of drawing general conclusions closely connected with practical purposes. Thus, foreign bodies penetrating from without, in conjunction with retained secretions and calculous concretions, might legitimately form one subdivision of the class; whilst another should be constituted by new formations (*Pseudoplasma*), which again are naturally divisible into, 1. Modifications of textures and organs previously existing, e. g. sarcoma, clavus, condyloma, cysts.—2. Deposits of natural textures in situations where their occurrence is abnormal, e. g. lipoma, steatoma, exostosis, and ossification.—3. Accidental productions, consisting of peculiar textures not analogous to the original composition of any part of the animal frame, e. g. polypus, scirrhus with carcinoma, and fungus, including encephaloma, neuroma, and melanosis.

Nor must it be supposed that criticism, such as we have ventured to institute upon these points, bears solely upon matters of theory, which might with indifference, as regards all useful ends, be settled in many different ways. For if, to use Von Walther's own language, "the surest mode of at once attaining brevity and correctness, whilst all needless repetition is avoided, consists in arranging each object to be examined in a suitable position with regard to every other,"—it is obvious, that the intention will be defeated by adopting a system that precludes the

possibility of arriving at such general views of a mass of objects possessing natural connexions with each other, as would permit an easy and unstrained passage to an examination of those characteristic particularities by which the individuals differ from each other.

In the preceding remarks on Professor Von Walther's treatise it will be seen that we have abstained from any attempt at giving an analytical account of its contents, and chiefly for the reason that, consisting of a general and elementary exposition of the principles of surgical science, it is not of a kind to require or justify such a mode of proceeding. The spirit in which it is executed still farther confirms us as to the propriety of this course: the work is strictly dogmatic, with an almost utter exclusion of any attempt at entering upon discussion of unsettled questions, or estimating the relative value of contending opinions on points of theory or practice. We will not venture to decide whether this be a recommendation or otherwise; but in all other particulars there can be no hesitation in giving a favorable opinion. The language is clear, precise, and remarkably free from the parenthetical diffuseness of style which so frequently forms a heavy drawback on the merits of German scientific literature. By abstaining from a common practice among his countrymen, which consists in interweaving with practical every-day matters a certain vague and misty speculative philosophy, Von Walther succeeds in escaping the obscurity and want of reality which so often fatigue and disgust the English reader. Just enough, too, of notice is bestowed upon the literature of the science, by indicating to the student the best sources of information in general, and by quoting the latest and surest authorities on individual points, instead of burthening attention by a pedantic display of learning savouring more of vanity or trivial curiosity than of a sincere wish to accomplish a professed object.

We can therefore strongly recommend this work to such of our readers as are desirous of extending their acquaintance with the professional literature of Germany, and anticipate with gratification the more favorable opportunities which the succeeding volumes are likely to afford of comparing the condition of surgery among ourselves with that which it presents among Von Walther's countrymen.

Since the above notice was written we have been informed that Von Walther's work will ere long appear in an English dress, its translation having been undertaken some time since by a gentleman every way qualified to do it justice. We congratulate the English student on this circumstance, as we are certain the work will be found a valuable addition to scientific surgery, and tend to counteract the empirical taste which circumstances have for so many years tended to foster in the minds of surgical students in this country.

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ART. X.—*A brief Memoir of SIR WILLIAM BLIZARD, Knt. F.R.S. L. and E. Surgeon and Vice President of the London Hospital. Read before the Hunterian Society, 7th October, 1835; with additional particulars of his Life and Writings.* By WILLIAM COOKE, Member of the Royal College of Surgeons, &c. &c. London. Pp. 67.

SIR WILLIAM BLIZARD had outlived his contemporaries. A life prolonged to more than ninety years had introduced him to a new genera-

tion, and he retained the desire to act with those whose attainments and feelings were not of his time. To most of the living practitioners his name is chiefly known as that of a tenacious elderly gentleman, celebrated for alarming the candidates for college honours in Lincoln's Inn Fields. He was the son of an auctioneer at Barnes Elms, and was born in 1743. His appointment to the London Hospital, long the scene of his active labours, took place in 1780; and in conjunction with Dr. Maclaurin, a Scotch physician, he established the first regular medical school in connexion with such an institution, in 1785. His biographer records that he suggested, and first practised, the operation of tying the superior thyroideal artery in bronchocele; that he was one of the first surgeons who secured the subclavian; and introduced the practice of large and repeated bleedings in fractures of the ribs. The last operation which he performed in public was in 1827, when he was eighty-four years of age. His clinical merits are stated to have been considerable, but his professional reading appears to have been very limited. Perhaps the circumstance most honorable to his professional memory is, that he was thought worthy of the high praise of John Abernethy, who had been his pupil, and who spoke of him, in his *Inquiry into Hunter's Theory of Life*, in terms of grateful recollection. His services in the London Hospital called forth the strongest expressions of acknowledgment from the governors on several occasions. In the prosperity of the College of Surgeons he seems ever to have felt a strong interest. He was twice president; he thrice delivered the Hunterian oration; and, on retiring from his lectures at the hospital, he presented his anatomical and pathological collection to the college, amounting to nearly nine hundred specimens. We gather also from Mr. Cooke's account of his connexion with this chartered body, that a part of his services consisted of a resolute resistance to certain reforms. His benevolence, however, was warm and active, and manifested by continual exertions of public and of private charity. Like many men of advanced age, he gradually abandoned the political sentiments which in early life he had warmly advocated. The energy of his temperament, which had sometimes endangered his life in prolonged anatomical labours, led him to become a member of the London Military Foot Association in 1780; and at a later period he was a zealous lieutenant-colonel of the London Volunteers. He was much interested, also, in police and prison reforms; and one of his most valuable publications related to the improvement of hospitals and other charitable institutions, which was translated into German. It should be added, also, that throughout a long life of usefulness, his efforts were always directed by a humble belief in the superintendence of a power which beheld all good efforts with approbation. With characteristic professional confidence, he submitted to the operation for cataract when ninety-one years old: it was performed by Mr. Lawrence with the happiest results. With an equally characteristic attachment to the Muse, Sir William commemorated his recovery of sight by an ode.

We cannot say that Mr. Cooke's Memoir is very well compiled, or pay any compliment to it as a composition; but there are many particulars in it not undeserving of the student's perusal.

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ART. XI.—*Formulaire pour la Préparation et l'Emploi de plusieurs nouveaux Médicaments.* Par F. MAGENDIE. Huitième édition, revue et augmentée: à Paris. 1835. 12mo. pp. 438.

*A Formulary for the Preparation and Medical Administration of certain new Remedies.* Translated from the French of M. MAGENDIE, with annotations and additional articles, by JAMES MANBY GULLY, M.D. London, 1835. 12mo. pp. 216.

THE principal substances which have been added in the present edition of this celebrated formulary are, codeine, narceine, meconine, prussic ether, lactic acid, and mannite: we will proceed to give a short account of them.

*New principles discovered in opium.*—*Narceine* was discovered in 1832, by M. Pelletier, and meconine was discovered and well studied, says Magendie, about the same time, by M. Couerbe. They are both obtained from the ammoniacal solution from which morphia has been precipitated. *Narceine* is white and inodorous, and crystallizes in long needles; its taste is slightly bitter and almost metallic. It dissolves in 230 parts of boiling, or 375 parts of cold water. It melts at 92° of the centigrade thermometer (197°  $\frac{1}{2}$  Fahr.) and is decomposed by a higher temperature. Its principal characters, however, are developed by the action of acids. When concentrated, they decompose it entirely, especially when aided by heat. When diluted with half their weight of water they combine with the narceine, and produce remarkable changes of colour. Thus, at the moment when the two bodies come in contact, a beautiful blue is produced; and if the water is absorbed by chloride of calcium, or by magnesia, a rose colour is produced. This singular property of narceine has induced M. Couerbe to call it the vegetable chameleon. Nitric acid changes it into oxalic acid.

*Meconine* is a white substance, crystallizing in six-sided prisms, two of the sides being larger than the others and parallel. It melts at 90° of the centigrade thermometer (194° Fahr.). At this temperature it is strongly acted upon by chlorine, which changes its colour to a fine blood-red, and turns it into a new acid, called the mechloic. M. Magendie has often injected narceine and meconine into the jugular vein of dogs, but without effect; and on man they have not yet been tried.

*Codeine* was discovered in 1832 by M. Robiquet. Finding that the muriate of morphia prepared according to Gregory's method did not yield a proper quantity of morphia, he suspected that it was impure. This turned out to be the case, and its impurity was occasioned by a new substance crystallizing in beautiful prisms, soluble in water, ether, and alcohol, and possessing very energetic alkaline properties. This was codeine.

M. Magendie has administered codeine to a considerable number of patients at the Hôtel-Dieu, and he finds that a single grain given at once or at twice is sufficient in some cases to produce sleep, which is not followed the next day by drowsiness or a sense of weight in the head, effects often produced by morphia. Several comparative experiments have seemed to show that a grain of codeine is equivalent to half a grain of pure morphia. Two grains of codeine have more than once excited

nausea and even vomiting. Even when given in the dose of one grain, several patients requested that the medicine might be discontinued, as they said it made them sleep too much.

The muriate of morphia is more powerful than the uncombined alkali, and two grains cause not only sleep, but vertigo, nausea, and even vomiting. But under the use of this dose, M. Magendie has seen sciatica and facial neuralgia, after having resisted the long series of remedies employed against them, disappear as if by enchantment. M. Magendie has hitherto tried only the muriate and the nitrate of codeine, but he has found that several patients who had exhausted the narcotic power of morphia and its salts, still experienced the most satisfactory effects from the use of codeine, alternately with its nitrate or its muriate.

*Hydrocyanic ether* was discovered by M. Pelouze, a young chemist of great merit. Its effects are the same as those of prussic acid, but less in degree, and it may be administered in the same diseases, but its disagreeable smell is a strong obstacle to its general use. One patient, indeed, took a potion containing six drops of prussic ether, and experienced relief from a convulsive cough, without complaining of the odour; but, when administered at the Hôtel-Dieu, the patients were so disgusted by the smell, that our author was obliged to omit the medicine.

*Mannite*.—The manna of commerce, known by the name of manna in the tear, is treated with boiling alcohol, then filtered and allowed to crystallize; when cold the mannite is precipitated in small needles beautifully white. Mannite is soluble in water in almost any proportion, and between 105° and 110° of the centigrade thermometer (221° and 230° of Fahrenheit) it melts into a colourless liquid, which crystallizes on cooling: when heated more strongly, it burns and is decomposed like sugar. The dose for children is two drachms; half an ounce purges them too much.

*Lactic acid*.—We shall take our account of this substance from Dr. Gully's translation.

*“Process for procuring lactic acid.*—It is extracted both from milk and from the juice of beet-root. If from the latter, it should be left in a stove of a fixed temperature, between 25° and 30°. After a few days, viscous fermentation takes place, and hydrogen mixed with carburetted hydrogen is abundantly evolved. The fermentation ended, and the liquid restored to its former fluidity—which generally occupies two months, it is evaporated to a syrupy consistence; crystals of mannite then appear, and with them a sugar, having the properties of a grape sugar. The product of the evaporation is treated with alcohol, which dissolves the lactic acid, leaving a quantity of precipitated matters. The alcoholic extract is taken up by water, wherefrom a fresh deposit is made; the fluid is then saturated with carbonate of zinc, and a copious precipitation again takes place. Concentrated, the lactate of zinc crystallizes, is collected and heated with water, to which some animal charcoal previously washed with hydrochloric acid is added: the whole is then filtered, and the lactate of zinc, perfectly white, crystallizes: these crystals are again washed with boiling alcohol, in which they are insoluble. By successive treatment with baryta and sulphuric acid the lactic acid is separated and concentrated in vacuo. Finally on shaking it with sulphuric ether, which dissolves it, a flaky matter is separated. (See Ann. de Chimie et de Physique, April, 1833.)

*“By a precisely similar process, milk affords lactic acid. M. Carriol has also discovered it in the aqueous solution of the strychnos nux vomica.*

*“Physical and chemical properties of lactic acid.*—Concentrated in vacuo until it

loses no more water, lactic acid is a colourless fluid of a syrupy consistence, and a density, at the temperature of 20°.5, equal to 1,215. It is inodorous, and excessively acid to the taste. It absorbs moisture from the atmosphere. Water and alcohol dissolve any quantity of it. It has the property of rapidly dissolving phosphate of lime, particularly that of the bones, a property worthy the attention of medical men.

*Mode of administering lactic acid.*—As lactic acid is the solvent of food in the stomach, I thought that it might be advantageously used in dyspepsia or simple debility of the digestive organs: and I have not been disappointed.

"I give it in the form of lemonade or lozenges.

*Lactic Lemonade.*

Liquid lactic acid	. . . . .	1 to 4 gros.
Simple water	. . . . .	1 pinte.
—syrup	. . . . .	2 ounces.

*Lozenges of lactic acid.*

Pure lactic acid	. . . . .	2 gros.
Powdered sugar	. . . . .	1 once.
Tragacanth gum	. . . . .	q. s.
Volatile oil of vanilla	. . . . .	4 drops.

"The lozenges should weigh half a gros each, and be kept in a well-stopped glass. Six of them may be taken in twenty-four hours.

"From the facility with which lactic acid dissolves calcareous phosphate, it might be feasible to try it in cases of white or phosphate of lime gravel. I have not yet had an opportunity of doing so.

"I have commenced a series of clinical experiments with the lactates of soda, potass, &c. but the results are not yet ripe for publication."—(P. 193.)

Our readers will have observed in this extract a peculiarity of the translator: he does not translate the words *gros*, *once*, &c. but leaves the reader to find out their equivalent from a table at the end of the book. We are there told that the *gros*, a French weight, is 60 English grains; while a *gros*, a French measure, is one drachm and five minims in English measure, and at the same time that the French chemists always calculate fluids by weight. This is puzzling enough; but at p. 19 the directions given about a certain mixture are "Five gros (7 drachms and a half) to be taken morning and evening." On turning to the original p. 36, we find the direction to be "Pour une cuillerée à bouche matin et soir,"—i. e. a tablespoonful to be taken morning and evening. The translator says, indeed, at p. 211, that where he has mentioned 5 gros and a half a tablespoonful may be understood and administered, and he would have done far better to translate throughout *gros*, drachm, *once*, ounce, *cuillerée à bouche*, tablespoonful, *cuillerée à café*, teaspoonful, *livre*, pound, and so on.

The only other fault worth mentioning is the omission of several passages of the original, which, in a work of such remarkable succinctness as well as merit, is not commendable. Magendie (p. 149) speaks of *sulphate de quinine associé à l'émétique*. This is translated (p. 66) "combination with an emetic;" it should be "with tartar emetic."

In the following prescription there appears to be an error in the original, which is copied by Dr. Gully, at p. 125 of his translation:

*"Pommade d'hydrobromate de potasse bromurée.*

Axonge pur	. . . . .	1 once.
Hydrobromate de potasse	. . . . .	24 grains.
Brôme liquide	. . . . .	6 à 12 gros.

"Mêlez. Par frictions."—(P. 261.)

It should probably be *grains* or *gouttes* instead of *gros*.

The translation, however, is on the whole a very good one, and those who cannot read the original with facility would do well to procure it.

The additional articles are on creosote, and the ioduret and hydriodate of iron. It is remarkable that the ergot of rye is omitted both by Magendie and his translator. Dr. Gully, writing in 1835, says that creosote was discovered last year, (it was discovered in 1832;) and asserts "that British practitioners have not essayed the effects of creosote," to which he makes an exception afterwards in favour of Dr. Copland.

There is an inconvenience attending the use of the ioduret and hydriodate of iron, which Dr. Gully has not mentioned; they are decomposed with extreme facility, and, (unlike most medicines, which lose their energy by decomposition,) the quantity of iodine disengaged becomes too large for a wholesome dose.

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ART. XII.—*A new practical Formulary of Hospitals of England, Scotland, Ireland, France, Germany, &c.* Translated from the new French edition of MM. MILNE EDWARDS and P. VAVASSEUR, and considerably augmented, by MICHAEL RYAN, M.D. London, 1835. A pocket vol. of 571 pages.

DRS. EDWARDS and VAVASSEUR have given in this little work a general dispensatory, comprising most of the medicinal substances used throughout Europe, as well as many of the formulæ adopted in the principal hospitals; to these the translator has made some additions, consisting in great part of the formulæ which he employs in his own practice. The book certainly contains many drugs and many prescriptions; but the translator somewhat too heedlessly tells us, at page 3 of his preface, that "it is a modern universal pharmacopœia, and contains a vast number of new remedies, seldom if ever employed in this country, as well as many thousand medicines that have been omitted in our Pharmacopœias." And again, at p. 5, that "the names of many thousand medicines, seldom employed in this country, were given in popular French;" and that it was a troublesome undertaking to translate them. His own index shows that the sum total of drugs in the book is about 900, of which many appear there twice under different names. Yet this is a useful compendium; and its value to beginners would have been still greater had the slips of the pen or of the press been less numerous. At p. 251 we are told that sulphate of potassa is an energetic stimulant, that it is a violent poison in large doses, &c. &c.; meaning, of course, the sulphuret of potassa: and the same mistake occurs in several subsequent pages. In like manner, at p. 254 we have the sulphate of soda and sulphate of lime instead of the sulphuret of soda and sulphuret of lime.

At p. 306, and in several other places, we find bichlorate of mercury put for bichloride of mercury; and at the same page "mercury in astringent vegetables" is stated to be one of the substances incompatible with corrosive sublimate.

The following lozenges are certainly extravagant; we should not like to give them to any of our children.

"Lozenges of Cream of Tartar and Manna. H. of Germ.

R. Potassæ supertartratis, ʒ ss;

Mannæ . . . ʒ iv.

Aquæ . . . ʒ x.

M. Boil to a proper consistence, and make into two lozenges.

Used as a laxative for children."—(P. 497.)

So also, the following absorbent powder is said to be used in the German hospitals, but, to us, it savours much more of Brobdignag than Germany.

"R. Magnesiæ calcinatæ, ʒ ss;

Corticis aurantii,

Sacchari, aa ʒ j.

Divide in chartulas ij, capiat iij vel iv. quotidie."—(P. 500.)

At p. 422, Dr. Ryan, when describing the method of obtaining narcaine, says, "this is submitted to pressure, heated with boiling alcohol, 40° Rem.;" &c. Now 40° of Reaumur = 122° of Fahrenheit, a temperature far below that at which alcohol boils. The translator has here misunderstood Magendie, who says "on le soumet à la presse, puis on le traite par l'alcool à 40° bouillant;" &c. (Formulaire, 8vo. edit. p. 78.) The 40° indicates the specific gravity of the alcohol as measured by Baume's hydrometer, being about the strength of the sp. rectificatus of the London pharmacopœia.

It must, no doubt, seem ungrateful to an industrious translator to dwell almost exclusively on minute faults; but in a practical formulary minutiae are of all things the most important. The use of such a work as the present will, we apprehend, be found the greatest by those whose practical knowledge assists their judgment in estimating the respective value of the numerous formulæ thus placed before them. An extract from the eighth chapter, which contains the alteratives, will show the plan of the work more clearly.

"Antivenereal Pills. H. of Montp.

R. Auri et sodæ chloruret. gr. ʒ;

Extract. saponariæ, ʒ i;

Pulv. gum. acaciæ, q. s.

Fiant pilulæ xxx, quarum capiat i—viij quotidie.

Each pill contains gr. 1-60th of the chloride.

EXTERNALLY. Gr. 1-15th mixed with starch, in frictions in the interior of the mouth.

*Powder of the Chloride of Gold and Sodium.* H. of Montp.

R. Chlor. auri et sodii, gr. i;

Pulv. iridis florent, gr. ij.

Misce intime, et divide in chartulas, xv.

One of these powders should be used at each friction.

*Pommade of the Chloride of Gold and Sodium.* (Magendie.)

R. Chlor. auri et sodii, gr. x;

Adipis præpar. ʒss.

Fiat unguentum.

This pommade is applied to the surface of a small blister, to cause an absorption of the salt of gold."—(P. 359.)

"ARNICA. (FLOWERS AND ROOT.)

A very active stimulant to the nervous system. It is used in chronic rheumatism, paralysis, and amaurosis. It is also recommended as a febrifuge. The flowers pulverized act powerfully.



*Subst. Incompat.* The sulphates of iron and zinc, the acetate of lead, the mineral acids, &c.

*INTERNALLY.* Flowers. *Powder*, gr. vj—x. and gradually increased xxx—vj.

*Decoction and Infusion*, 3j—iv to Oij of water. They should be filtered through paper.

The root. *Powder*, gr. xij—3 i.

*Decoction.* The same as the flowers.

*Tincture éthérée.* P. ʒi—3 ss in a potion.

*Infusion of Arnica.* Hot. D. H. de la Ch.

R. Florum arnicæ montanæ, 3j;

Aquæ ferventis, Oij.

Cola per chartam.

*A teaspoonful to be taken at a time and frequently repeated. An ounce of the syrup of orange peel may be added to this infusion. It is employed in certain cases of apoplexy, paralysis, &c.*

*Nervine Infusion d'Arnica.* H. of Italy.

R. Radicis arnicæ mont. 3ij;

Aquæ ferventis, q. s.

Coque ad ʒvj, per chartam chola et adde,

Etheris sulphurici, ʒij.

*The dose is a spoonful at a time.*

*Vinous Infusion of Arnica.* H. of Germ.

R. Flor. arnic. mont. ʒss;

Aquæ puræ, Vini albi, aa ʒvj.

Coque, cola, et adde,

Syrup. cort. aurant, ʒss. Misce.

*The dose is half a glassful every hour.*

*Compound powder of Arnica.* H. of Germ.

R. Pulv. rad. arnicæ, Pulv. rad. serpent., Olei menth. piper. aa 3 ij.

Divide in chartulas vj, quarum capiat unam, secundâ quâque horâ.

*In severe fevers accompanied with diarrhæa.*

*Stimulating and Tonic Bolus.* H. de Montp.

R. Pulv. flor. arnicæ, Camphoræ, aa gr. iv;

Theriacæ, q. s. Fiat bolus.

*EXTERNALLY. Decoction.* In lotions, fomentations, &c." (P. 370.)

Upon the whole, we can very properly recommend this work not only to our readers in general, but to those medical men in particular who amid the wear and tear of practice sink into a hurtful sterility of prescription, and take up the convenient doctrine that there are only half a dozen good medicines in the world.

ART. XIII.—*Philosophical Transactions of the Royal Society of London, for the year 1835.* Parts I. and II. 4to. pp. 365.

*Proceedings of the Royal Society.* Nos. 18-23. From November 20, 1834, to February, 1836.—8vo. pp. 73.

OWING to their very limited circulation and expensive character, the Transactions of many of the Societies in this country dedicated to the cultivation of science are very little known to the generality of the members of our profession; and, consequently, many important enquiries and discoveries relating to medical science often remain for a long time in these learned repositories, hidden from the very class of readers whom

their authors are most desirous they should reach. With the view of remedying these evils, as far as in our power, we propose henceforth giving, from time to time, brief notices of all the more important papers relating to medicine, or any of its numerous branches, which may appear in the published labours of our learned Institutions.

In the present number we shall confine our attention to the most eminent of all our scientific bodies, the Royal Society; and it will at once appear, from the number and variety of the papers we shall have to notice, that natural science generally, and medical science in particular, engages no small share of the attention of that learned body.

Every one is acquainted with the publication, the first of the two which stand at the head of this Notice, it having continued to appear at pretty regular intervals, now exactly one century; and few are ignorant of the immense benefits which it has conferred on every department of science. As its name implies, it contains, at full length, the various scientific memoirs which the Council of the Society select, out of those presented to it, for publication, under the exclusive designation of the *Transactions of the Society*. The smaller publication is of recent origin and is probably unknown to many of our readers. It is a small fugitive publication, got up chiefly for the information of the members, but authenticated by the direct superintendence of the officers of the society. It comes out in small fasciculi, at irregular intervals, and gives an accurate but brief account of all the Proceedings of the Society, and an abstract, without comment, of all the papers read before it, whether destined for publication in the Transactions or not. As these abstracts are perfectly authentic, and generally of a size suited to our purpose, we propose to avail ourselves of the facilities afforded by them, in laying an outline of the memoirs before our readers; and we shall, in general, transcribe the very words of the original, without any comment of our own. We think it best, also, to make use of these abstracts in noticing the papers published at length in the Transactions, reserving to ourselves the power of examining in greater detail, and critically, at some other time, such of them as may seem to demand a more extended notice.

At the last Anniversary of the Royal Society, November 30, 1835, the number of members was 793, viz. 10 royal personages, 48 foreign members, and 735 home members: of this last class, gentlemen of the medical profession constitute a considerable proportion.

1, *On the Circulation of the Blood in Insects.* By JOHN TYRRELL, Esq. A.M.  
Read January 15, 1835.

"The observations on the circulation of the blood in insects, which is a discovery of comparatively recent date, have been made almost exclusively on insects in the larva state; but the author of the present paper details a variety of observations of the same fact in insects which had arrived at their last or perfect stage of development. Among the *Myriapoda*, the circulation was traced in the *Geophilus*, and still more distinctly in the *Lithobius forficatus*. The author also detected the circulation, by the motion of globules, through the nervures of the wings of various perfect insects, namely, of some species of the *Hemerobius*, *Panorpa*, *Phryganea*, and *Ephemera*; and particularly in the *Musca domestica*, or common house-fly. The paper is accompanied by drawings of the appearances described." (P. 317.)

2, *An Experimental Inquiry into the Cause of the grave and acute Tones of the Human Voice.* By JOHN BISHOP, Esq. Read Feb. 26, 1835.

"The author considers all the theories hitherto proposed respecting the functions of the organs of the human voice, as not only unsatisfactory, but as being founded on erroneous views. He shows that the modulation of the tones of the voice is not the result of variations either exclusively in the length or in the tension of the vocal chords, or in the size of the aperture of the glottis, or in the velocity or the temperature imparted to the air in its transit through these passages. He regards the organs of the voice as combining the properties of wind and of stringed musical instruments; and shows, first, that for the production of any musical tone it is necessary that the vocal chords should previously be made mutually to approximate; and, secondly, that the muscular forces acting on the arytenoid cartilages and vocal chords are adequate not only to resist the pressure of the column of air issuing from the lungs, but also to render either the whole or certain portions of the vocal chords susceptible of vibration when traversed by the current of respired air. In proportion as these parts of the vocal chords, thus rendered vibratory, increase in length, the number of their vibrations, performed in a given time, diminishes, and the tone of the sound emitted becomes, in consequence, more grave; and, conversely, the tone is more acute as the vibrating portions of the chord are shorter: these phenomena being precisely analogous to those which take place in stringed musical instruments.

"The author concludes his paper with some observations on the comparative physiology of the voice; and on the extensive range and superior excellence of this faculty in man." (P. 323.)

3, *Discovery of the Metamorphoses in the second Type of the Cirripedes, viz. the Lepades, completing the Natural History of these singular Animals, and confirming their affinity with the Crustacea.* By J. V. THOMPSON, Esq. F.L.S. Read March 5, 1835.

"The discoveries made by the author of the remarkable metamorphoses which the animals composing the first family of the Cirripedes, or *Balani*, undergo in the progress of their development, and which he has published in the third number of his *Zoological Researches* (p. 76), are in the present paper, which is intended as a *Prize Essay* for one of the Royal Medals, followed up by the report of his discovery of similar changes exhibited by three species of two other genera of the second tribe of this family, namely, the *Lepades*. The larvæ of this tribe, like those of the *Balani*, have the external appearance of bivalve *Monoculi*, furnished with locomotive organs, in the form of three pairs of members, the most anterior of which are simple and the other bifid. The back of the animal is covered by an ample shield, terminating anteriorly in two extended horns, and posteriorly in a single elongated spinous process. Thus they possess considerable powers of locomotion, which, with the assistance of an organ of vision, enable them to seek their future permanent place of residence. The author is led from his researches to the conclusion that the Cirripedes do not constitute, as modern naturalists have considered them, a distinct class of animals, but that they occupy a place intermediate between the Crustacea decapoda, with which the *Balani* have a marked affinity, and the Crustacea entomostraca, to which the *Lepades* are allied; and that they have no natural affinity with the Testaceous Mollusca, as was supposed by Linnæus, and all the older systematic writers on Zoology." (P. 325.)

4, *On the supposed Existence of Metamorphoses in the Crustacea.*

By J. O. WESTWOOD, Esq., F.L.S. Read June 18, 1835.

"The author refers the principal modifications of form which occur during the progressive development of animals to the three following heads: 1st, that of an animal produced from the egg in the form which it is destined to retain through life; its only change consisting in a series of moultings of the outer envelope, attended merely by an increase of size, and not by the acquisition of new organs; 2dly, when the animal, at its exclusion from the egg, exhibits the form which it continues to possess, subject to a series of moultings, during several of the last of which certain new

organs are gradually developed; and, 3dly, when the form of the animal, at its exclusion from the egg, is totally different from that under which it appears at the later periods of its existence; such change of form taking place during two or three of its general moultings, and consisting, not only in the variation of the form of the body, but also in a complete change in the nutritive and digestive systems, and in the acquisition of various new organs. This last phenomenon peculiarly characterizes what is termed a *metamorphosis*.

"It is the received opinion among naturalists that the Crustacea do not undergo metamorphoses, properly so called, and that the transformations they exhibit consist merely in the periodical shedding of the outer envelope. The object of the present paper is to establish the correctness of this opinion, in opposition to that of Mr. J. V. Thompson, who has laid claim to the discovery that the greater number of the animals belonging to the class Crustacea actually undergo metamorphoses of a peculiar kind, and of a different character from those of insects. Mr. Thompson's views are founded upon some circumstances which he has observed in certain animals of the genus *Zoea* of Bosc, and which have been recorded by Professor Slabber, and which have led Mr. Thompson to believe that, of these animals, some were the young of the *Cancer Pagurus*, or common crab, and others the young of the *Astacus Pagurus*, or common lobster; and these views are supposed by him to be corroborated by the annual peregrinations of the land crabs to the sea-side; for the purpose of depositing their eggs, rendered necessary by the aquatic habits and conformation of the young. The author proceeds to examine at length the arguments on which Mr. Thompson has founded these opinions, and adduces his reasons for concluding that they are erroneous, and that no exception occurs to the general law of development in the Crustacea, namely, that they undergo no change of form sufficiently marked to warrant the application to them of the term *metamorphosis*." (P. 341.)

5, *Continuation of the Paper on the relations between the Nerves of Motion and of Sensation, and the Brain; and more particularly on the structure of the Medulla Oblongata and of the Spinal Marrow.* By Sir C. BELL, F.R.S. Read April 30, 1835.

"The author enters into a minute anatomical investigation of the structure of the spinal cord, and of its relations with the encephalon, and with the origins of the nerves. He finds that the spinal cord is constituted, in its whole length, by six pairs of columns, namely, two posterior, two lateral, and two anterior; each column being composed of concentric layers, and invested with an external coating of cineritious substance, and all the columns being divided from each other by deep sulci, which penetrate nearly to the centre of the cord. On tracing the posterior columns in their ascent towards the encephalon, they are seen to diverge laterally at the *culamus scriptorius*, or bottom of the fourth ventricle, and to proceed into the substance of the cerebellum. Each of these posterior columns is here found to consist of two portions, the outermost being the largest; and they now constitute the *processus cerebelli ad medullam oblongatam*. This subdivision of the posterior columns may be traced throughout the whole length of the spinal cord. The lateral columns give origin to the posterior roots of the spinal nerves, and are therefore the parts subservient to sensation. In ascending towards the brain, each of these columns has a double termination; first, in the root of the fifth pair of cephalic nerves; and, secondly, in the place where both columns unite into one round cord, and mutually decussate.

"Between the lateral and the anterior columns there is interposed a layer of cineritious matter, constituting a continuous stratum from the *cauda equina* to the roots of the auditory nerves. There is also a septum, dividing the right and left tracts subservient to sensation in the region of the fourth ventricle, and apparently terminating at the point of decussation of these tracts; but, in reality, separating to allow of this decussation, and joining the central portion of the cord, which connects the posterior with the anterior columns, and extends from the *pons Varolii* to the *cauda equina*.

"The anterior columns, constituting, at their upper part, the *corpora pyramidalia*, after their union and decussation, compose the motor columns of the spinal cord. They do not, in their course, unite or decussate with the lateral or sensitive columns; decussation taking place only among the columns performing similar functions; that is, the motor columns with the motor, and the sensitive with the sensitive." (P. 331.)

- 6, *Observations on the Theory of Respiration.* By WILLIAM STEVENS, M.D.D.C.L.  
Read May 21, 1835.

"From the fact that no carbonic acid gas is given out by venous blood when that fluid is subjected to the action of the air-pump, former experimentalists had inferred that this blood contains no carbonic acid. The author of the present paper contends that this is an erroneous inference; first, by showing that serum, which had been made to absorb a considerable quantity of this gas, does not yield it upon the removal of the atmospheric pressure; and next, by adducing several experiments in proof of the strong attraction exerted on carbonic acid both by hydrogen and by oxygen gases, which were found to absorb it readily through the medium of moistened membrane. By means of a peculiar apparatus, consisting of a double-necked bottle, to which a set of bent tubes were adapted, he ascertained that venous blood, agitated with pure hydrogen gas, and allowed to remain for an hour in contact with it, imparts to that gas a considerable quantity of carbonic acid. The same result had, indeed, been obtained, in a former experiment, by the simple application of heat to venous blood confined under hydrogen gas; but on account of the possible chemical agency of heat, the inference drawn from that experiment is less conclusive than from experiments in which the air-pump alone is employed. The author found that, in like manner, atmospheric air, by remaining, for a sufficient time, in contact with venous blood, on the application of the air-pump, acquires carbonic acid. The hypothesis that the carbon of the blood attracts the oxygen of the air into the fluid, and there combines with it, and that the carbonic acid thus formed is afterwards exhaled, appears to be inconsistent with the fact that all acids, and carbonic acid more especially, impart to the blood a black colour; whereas the immediate effect of exposing venous blood to atmospheric air, or to oxygen gas, is a change of colour from a dark to a bright scarlet, implying its conversion from the venous to the arterial character: hence the author infers that the acid is not formed during the experiment in question, but already exists in the venous blood, and is extracted from it by the atmospheric air. Similar experiments made with oxygen gas, in place of atmospheric air, were attended with the like results, but in a more striking degree; and tend therefore to corroborate the views entertained by the author of the theory of respiration. According to these views, it is neither in the lungs, nor generally in the course of the circulation, but only during its passage through the capillary system of vessels, that the blood undergoes the change from arterial to venous; a change consisting in the formation of carbonic acid, by the addition of particles of carbon derived from the solid textures of the body, and which had combined with the oxygen supplied by the arterial blood: and it is by this combination that heat is evolved, as well as a dark colour imparted to the blood. The author ascribes, however, the bright red colour of arterial blood, not to the action of oxygen, which is of itself completely inert as a colouring agent, but to that of the saline ingredients naturally contained in healthy blood. On arriving at the lungs, the first change induced on the blood is effected by the oxygen of the atmospheric air, and consists in the removal of the carbonic acid, which had been the source of the dark colour of the venous blood; and the second consists in the attraction by the blood of a portion of oxygen, which it absorbs from the air, and which takes the place of the carbonic acid. The peculiar texture of the lungs, and the elevation of temperature in warm-blooded animals, concur in promoting the rapid production of these changes." (P. 334.)

- 7, *On the Influence of the Tricuspid Valve of the Heart on the Circulation of the Blood.* By T. W. KING, Esq., M.B.C.S. Read June 4, 1835.

"The purpose of this paper is to prove experimentally that the tricuspid valve of the human heart does not, in the ordinary state of the circulation, completely prevent the reflux of blood from the ventricle into the auricle on the right side, and that the amount of regurgitation is continually varying according to the different degrees of distention of the ventricle. The author points out the anatomical differences between the auriculo-ventricular valves on the right and left sides of the heart; from the consideration of which it might have been inferred, independently of direct experiment, that while the structure of the mitral valve is adapted to close accurately all commu-

nification of the left auricle and ventricle during the contraction of the latter, that of the tricuspid valve is designedly calculated to allow, when closed, of the flow of a certain quantity of blood from the right ventricle back again into the auricle. The comparatively imperfect valvular function of these latter membranes is shown by various experiments on recent hearts, in which it was found that fluids injected through the aorta into the left ventricle were perfectly retained in that cavity, by the closing of the mitral valve; but that when the right ventricle was similarly injected through the pulmonary artery, the tricuspid valves generally allowed the escape of the fluid in streams, more or less copious, in consequence of the incomplete apposition of their margins. On repeating these experiments on different animals the author obtained similar results; but found that the imperfection of the valvular function was greater the sooner the heart was examined after the death of the animal; and that if the trials were made after the lapse of a certain time, the rigidity which gradually supervened on the muscular fibres of the heart, and of the *carnea columnæ* attached to the margins of the valves, brought them into more complete apposition and led to the accurate closing of the passage. This effect, however, was never so perfectly accomplished in the tricuspid, as in the mitral valves.

"The author regards this peculiarity of structure in the tricuspid valve as an express provision against the mischiefs that might result from an excessive afflux of blood to the lungs, analogous to a safety-valve; and as more especially advantageous in incipient diseased enlargements of the right ventricle. He adverts to the conditions of the heart during the fetal state of existence, in which the same necessity of guarding against excessive pressure does not occur, and where the structures are found to correspond to the variation of functions. A similar adjustment of the right auriculo-ventricular valve to the peculiar circumstances and habits of animals may also be traced by extending the inquiry to various classes of animals." (P. 337.)

- 8, *On the Ova of Women and Mammiferous Animals, as they exist in the Ovaries before Impregnation.* By THOMAS WHARTON JONES, Esq. Read June 18, 1835.

[We gave an account of this paper in our last Number, p. 160.]

- 9, *On the Temperature of some Fishes of the Genus Thynnus.* By JOHN DAVY, M.D., F.R.S., Assistant Inspector of Army Hospitals. Read March 26, 1835.

"The author had occasion to observe, many years ago, that the Bonito (*Thynnus pelamys*, Cuv.) had a temperature of 99° of Fahr. when the surrounding medium was 80° 5, and that it, therefore, constituted an exception to the generally received rule that fishes are universally cold-blooded. Having found that the gills of the common Thunny of the Mediterranean (*Thynnus vulgaris*, Cuv.) were supplied with nerves of unusual magnitude, that the heart of this latter fish was very powerful, and that its muscles were of a dark red colour, he was led to conjecture that it might, like the Bonito, be also warm-blooded; and this opinion is corroborated by the testimony of several intelligent fishermen. The author endeavours to extend this analogy to other species of the same family, which, according to the reports of the fishermen of whom he made enquiries, have a high temperature, and in whose internal structure he noticed similar peculiarities as in the Thunny; namely, very large branchial nerves, furnished with ganglia of considerable size. In this respect he considers that in these fishes the branchial system of organs makes an approximation to the respiratory apparatus of the mammalia, and that it probably contributes to the elevation of temperature, resulting from the more energetic respiration which he supposes to be exercised by these organs. He, however, thinks it not improbable that these fish may possess means of generating heat peculiar to themselves, and of which at present we have no adequate idea. He conceives that the situation of the kidneys, of which a considerable portion is even higher than the stomach, and posterior to the gills, and which are of large size, and well supplied with nerves and blood-vessels, may possibly act a part in the production of an elevated temperature; but, on the whole, he is disposed to ascribe the greatest share of this effect to the superior magnitude of the branchial nerves." (P. 327.)

- 10, *On the Influence of the Respiratory Organs in regulating the Quantity of Blood within the Heart.* By JAMES WARDROP, Esq. F.R.S. Read June 18, 1835.

"The author observes that the act of inspiration tends not only to favour the passage of the blood into the *venæ cavæ*, but also to detain it in the pulmonary vessels,—in consequence of the expansion of the lungs allowing of its more ready ingress into the pulmonary arteries, and impeding its exit by the veins—and thus retards its return to the heart. On the other hand, the collapse both of the lungs and of the parietes of the chest, during expiration, assists the transmission of arterial blood from the lungs into the left cavities of the heart, and promotes its passage into the aorta. Thus he considers inspiration as an auxiliary to the venous, and expiration to the arterial circulation; the first acting like a sucking, and the latter like a forcing pump, in aiding the power of the heart. On this principle he explains the influence exerted on the circulation, and on the action of the heart, by various modes of respiration, whether voluntary or involuntary, in different circumstances. Laughter, crying, weeping, sobbing and sighing, &c., he considers as efforts made with a view to effect certain alterations in the quantity of blood in the lungs and heart, when the circulation has been disturbed by mental emotions." (P. 342.)

- 11, *On the Anatomical and Optical Structure of the Crystalline Lenses of Animals.* By Sir DAVID BREWSTER, K.H., LL.D., F.R.S. Read January 14, 1836.

[We can find room for only a portion of the abstract given of this curious paper, which cannot be well understood without the plates.]

"The author has examined the structure of the crystalline lens of the eye of a great variety of animals belonging to each of the four classes of vertebrata; and has communicated in this paper a detailed account of his observations, arranged according as they relate to structures more and more complex. In a former paper, published in the *Philosophical Transactions* for 1833, the lens of the Cod fish was taken as the type of the simplest of these structures, in as much as all the fibres of which it is composed converge, like the meridians of a globe, to two opposite points, or poles, of a spheroid or lenticular solid; both of which poles are situated in the axis of vision. The structure which ranks next in respect of simplicity is that exhibited in the salmon, among fishes; in the gecko, among reptiles; and in the hare, among mammalia. It presents at each pole two septa placed in one continuous line, in different points of which all the fibres proceeding from the one surface to the other have their origin and termination. A structure somewhat more complex is met with in the lenses of most of the mammalia, and is particularly exemplified in the lion, the tiger, the horse, and the ox. Three septa occur at each pole in the form of diverging lines inclined to one another at angles of  $120^\circ$ . The next degree of complexity is presented in the lens of the whale, the seal, and the bear, which contain, instead of three, four septa on each side, placed at right angles to each other in the form of a cross. In some specimens of lenses of whales and seals the author observed two septa from each pole, forming one continuous line, from each of the extremities of which proceeded two others, which were at right angles relatively to one another: so that there were in all five on each surface. The most complex structure is that of the lens of the elephant, which exhibits three primary septa diverging at equal angles from the pole, and at their extremities bifurcating into two additional septa, which are inclined to each other at angles of  $60^\circ$ , these latter being the real septa, to which the fibrous radiations are principally related. In some lenses of the elephant the author found the three septa immediately proceeding from the poles exceedingly short, and approaching to evanescence; so that he has no doubt that occasionally they may be found to have disappeared, and that the other six septa will then all diverge from the poles, like the radii of a hexagon, at angles of  $60^\circ$ ." (P. 366.)

ART. XIV.—*Das Streckfieber und dessen Behandlung, im Umriss dargestellt.* Von Dr. G. C. REICH, Professor der Medicin, &c.—Berlin, 1835.

*An Outline of the History and Treatment of the Fever of Growth.* By Dr. G. C. REICH, Professor of Medicine, &c.—Berlin, 1835.

IN German scientific writing we have often to forgive the clumsiness of the form for the sake of the importance of the matter. Valuable discoveries are frequently wrapped up in a phraseology which stoutly resists our first attempts to penetrate its meaning. But we readily pardon our author the trouble he may have caused us if we find any thing in him to requite it. There is even a zest in earning information, which one does not feel in receiving it without exertion. But, in the present case, we cannot say that the labour which it costs us to understand our author is fully rewarded. Dr. Reich commences with a philosophical introduction which is but feebly connected with his professed object; he propounds some important statements, but without taking the trouble to go into either proof or elucidation; and terminates the book before properly entering upon the subject.

His positions are as follows:—

In the first place, that there are five stages of growth, or, as he calls it, of *evolution*; viz. *teething, the changing of the teeth, puberty, and the period between puberty and manhood*: he is rather doubtful at first about the existence of a fifth stage, but, finally, concludes that the period at which the *wise tooth* makes its appearance ought to be considered as such. An increased flow of blood to the part where the phenomenon of growth or *evolution* takes place is required to effect that phenomenon. The author makes use of the words *orgasm, turgescence, and congestion*, in order to describe the condition of such a part. During the first two stages of growth, this condition is found in the head; during the third stage, it is found in the organs of generation and in those of sense; and, during the fourth, principally in the lungs.

His second position is, that this congestion is frequently attended by symptoms, (which he denominates in the aggregate "*the fever of growth*;" ) and which symptoms are, increased heat and redness of particular parts of the face; sometimes intermitting chilliness and paleness of the lips, nose, and cheeks; peevishness, caprice; pain in the head; disagreeable breath; chattering of the teeth; indisposition to eat and drink; vomiting; flying pains in the limbs; unsteady gait.

These are, doubtless, pathological signs, but they are never to be considered as a real disease, and never to be treated antiphlogistically. The reason of this we shall find in his third position. It is that the congestion or turgescence above mentioned is not of an inflammatory nature, never tends to inflammation, and never terminates in it, except in consequence of improper treatment. Therefore, in the first two stages of growth, cerebral congestion, which is a provision of nature to effect the phenomena of *evolution*, is never to be counteracted by depletion. Bloodletting is especially contraindicated. No fear need be entertained of inflammation; *the author never saw a case of acute inflammation of the brain in a child*! The latter disease (if it terminates fatally,) supposes the deposition of plastic matter between the membranes; whereas,



in children, one finds nothing except an extravasation of watery and albuminous fluid in the ventricles. Dr. Reich holds, then, that the extravasation of an albuminous fluid is not a sign of inflammation.

He gives the following curious account of the manner in which antiphlogistic treatment may cause a normal congestion to produce extravasation of a watery fluid in the ventricles of the brain. Supposing the child to have been bled, and nourishment to have been denied it, he describes the absorbents as having a treble duty to perform. They have first, to find matter for the nutrition of the body; then, for its growth; and, finally, to supply the place of that of which it has been deprived by the physician. All this matter must be found in the body of the child itself, seeing that the antiphlogistic treatment precludes all nourishment from without. An unhealthy activity of the absorbents is consequently set up. All the vessels which lead to the heart are loaded with reabsorbed matter. In the brain a normal congestion is superseded by an abnormal one; extravasation takes place in the ventricles; the physician thinks he has to deal with a case of acute inflammation, and bleeds till the patient dies. This is nearly tantamount to the assertion that bleeding promotes plethora.

In the third stage of growth, our author asserts that the organs of sense present symptoms of congestion, which are only aggravated by the antiphlogistic treatment. He very seldom descends to particulars: he instances, however, the junction of the *os annulare* with the temporal bone, and the consolidation of the *pars squamosa* with the *pars petrosa*, as giving rise to symptoms which simulate inflammation, but which ought never to be treated as such.

These several congestions, should they proceed to an extreme, may be controlled by cold applications. This is the utmost extent to which the author's theory allows him to interfere, except in affections of the lungs, during the third stage of growth, where there often exists a disposition to inflammation, which ought to be vigorously opposed. But he is continually asserting that the antiphlogistic treatment, and more particularly the exhibition of calomel in the case of children, are extremely prejudicial, inasmuch as they render a healthy congestion morbid, and violently interrupt the processes of nutrition and growth which are essential to the health of the child. This is the part of his book which is most worthy of consideration: unfortunately, it is neither illustrated by observation nor supported by proof.

In treating of the exhibition of calomel to children, he alludes to the English, and mentions Quin and Dobson as authors whose pernicious recommendations ought to be most carefully avoided.

He boasts of a treatment, he tells us, peculiarly simple and easy: it assists, instead of perverting, the course of nature. We have mentioned already his cold applications, which are to regulate but not subdue congestion. Of course, the patient is to breathe a cool and salubrious atmosphere; but Dr. Reich's main remedy is *muratic acid*. This is applicable to the fever of growth, in whatever stage it may make its appearance. He forgets to mention the exact dose; but he can confidently recommend it in all those cases where bad management on the part of the nurse, and bad treatment on the part of the physician, have not succeeded in imparting to the congestion a more or less inflammatory type.

ART. XV.—*Eupædia; or, Letters to a Mother on the watchful Care of her Infant, in reference to Diet, Clothing, Air, Exercise, Medicine, &c.* By A PHYSICIAN.—London, 1836. 18mo. pp. 144.

WE have read this little book with much pleasure, and we can conscientiously recommend it to our readers as one of the very few of a medical character that can be put into the hands of non-professional persons, not only with safety but advantage. While suited to the capacity and understanding of every well-educated mother, it is entirely free from all absurdities either of theory or practice; and as it professes only to teach the knowledge of diseases so far as to guard against them, and to recognise their approach, with the view to the summoning of the only legitimate prescriber, or, at most, enjoins the provisional employment of simple and innocuous remedies, it is to be regarded as entirely distinct from the class of "Guides" and "Domestic Medicines" for the nursery. Although inferior both in its plan and its execution to the admirable "Advice to young Mothers, by a Grandmother," published many years since, it is in some respects more suited to the purpose which it professes, of giving advice to mothers which they can understand, and can follow without risk of danger.

In going over the pages we marked several passages both for commendation and criticism; and we must say, that the number of the former greatly exceeded the latter. Indeed, with the exception of a frequently too fine or too ambitious style, there were only two or three points in which we did not entirely concur with the author. We were a little startled at finding the mother counselled to study and practise *auscultation* (Letter VI.) with the view of being in a condition to give full information to the physician; and we apprehend it will be some time before this advice can be followed with advantage. We were also (perhaps unjustly) startled at the zealous recommendation to the mother to learn "*to lance the little patient's gums herself*," (p. 106-107), since such a practice certainly is likely to be much less injurious than the administration of many powerful internal medicines which mothers now habitually give. Of the additional direction (p. 133,) that, "when the gums have once been lanced, they may be prevented from closing, by passing a common ivory knitting needle down to the teeth or socket *daily*," we cannot possibly approve, whether the operator be lay or professional. We also strongly object to the following piece of advice addressed to the mother (nurse): "meat should be taken *three times daily*, in moderate quantities each time. It is often necessary to add ale or porter, and other nutritious fluid." (P. 62.) Surely the author cannot mean that all nurses should eat meat (i. e. animal food) thrice daily, whether they have been accustomed to it or not? Most certainly such a practice would tend to disorder, and thereby debilitate the system, in the case of delicate mothers, accustomed at other times to a quite different regimen. Indeed, we do not hesitate to say that infinitely more mischief is done to the health of nurses by the opinion, universally prevalent among women, that it is necessary to eat and drink a great deal, "in order to keep up their strength," than by any other cause; and we are surprised to find the author of this little work, (who, we have reason to believe, is really a physician of great experience,) sanctioning such a prejudice—for such

we must call it—by his high authority. We are the more surprised at this, as we find, among the passages noted for commendation, more than one relating to the dieting of the child, all of which bear strongly on the importance of simplicity and moderation in this particular. How just are the following observations:

“The great error committed in regard to the diet of infants, is not so much that of improper *kinds* of food as of its undue *quantity*.” (P. 68.) “The stomach, even of an infant, will bear a little improper food with greater impunity than too much even of that which is most suitable. I believe few infants, if any, among the rich have suffered from too little food, but an innumerable number have paid with their lives the penalty of over-feeding.” (P. 70.)

We conclude by quoting a passage, with which we ourselves are still more pleased, and which we recommend to the consideration of all our readers who are themselves parents, as no less philosophical than practically true.

“During this daily process of washing, which should not be done languidly but briskly and expeditiously, the mind of the little infant should be amused and excited. In this manner dressing, instead of being dreaded, as a period of daily suffering,—instead of being painful, and one continued fit of crying, will become a recreation and amusement. In this, treat your infant, even your little infant, as a sensitive and intelligent creature. Let every thing which *must* be done, be made not a source of pain, but of pleasure, and it will then become a source of health, and that both of body and mind; a source of exercise to the one, and of early discipline to the other. Even at this tender age, the little creature may be taught to be patient, and even gay, under suffering. Let it be remembered that every act of the nurse towards the little infant, is productive of good or evil upon its character as well as health. Even the acts of washing and clothing may be made to discipline and improve the temper, or to try and impair it, and may therefore be very influential on its happiness in future life. For thus it may be taught to endure affliction with patience and even cheerfulness, instead of fretfulness and repining. And every infliction upon the temper, is also an infliction upon the body and the health of the little child. The parent and the nurse should, therefore, endeavour to throw her own mind into her duties towards her offspring. And in her intention of controlling her infant's temper, let her not forget that the first step is to control her own. How often have I observed an unhappy mother the parent of unhappy children!” (P. 89.)

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ART. XVI.—*On Dropsies connected with suppressed Perspiration, and coagulable Urine*, by JONATHAN OSBORNE, M.D., President of the King and Queen's College of Physicians, in Ireland, Physician to Sir P. Dun's and Mercer's Hospitals, &c. Pp. 64. 1835.

A REGRET expressed by Dr. Gregory several years ago, that the connexion between albuminous urine and organic disease of the kidney, pointed out by Dr. Bright, had not attracted that degree of attention which its frequency and importance would seem to demand, is now repeated by Dr. Osborne, who condemns, at the same time, in severe terms, the conduct of some who have depreciated the discovery by loose statements, instead of resisting it with facts. The importance of the subject itself, and the suspicion that it has been neglected or unfairly dealt with, are our reasons for taking a survey of the evidence which has been adduced on both sides.

Dr. Bright described in 1827, in his Medical Reports, an organic

change in the kidney of many dropsical patients, commonly consisting (when fully developed) of a deposition of a yellowish granular matter in its texture, which he invariably found connected with an albuminous state of the urine during life. He hazarded the conjecture that there were three forms of this organic disease. In the first the kidney was soft, of a mottled yellow externally; the cortical part yellowish grey, and the tubular pale; in the second stage the cortical part was converted more or less into a granulated texture with a copious white interstitial deposit; in the third these granulations were increased, of a yellow, red, or purplish colour, projecting externally so as to render the surface of the kidney rough, and producing a semi-cartilaginous hardness of the whole gland, the tubular portions being drawn near the surface. This disease was often indicated by pain across the loins, and upper part of the abdomen, and by sickness and vomiting. During its progress there was a strong tendency to inflammations, especially of the serous, and sometimes of the mucous membranes, and to effusions of blood and serum into the brain. The specific gravity of the urine was very low, owing to a deficiency of urea and salts. He considered it most probable that this organic change was secondary: being the result of various hurtful causes influencing it through the medium of the stomach and skin. The great tendency to inflammation of other organs led him to recommend bloodletting, and cupping the loins to relieve the local disease. He preferred supertartrate of potash, but employed occasionally all diuretics except mercury.

The accuracy of Dr. Bright's views was put to the test by Drs. Christison and Gregory, in the Edinburgh Infirmary; and they subsequently published eighty-seven cases, strongly confirming the connexion between the organic disease and the condition of the urine: in every instance in which an examination took place after death, the granular state of the kidney being found. Dr. Gregory, however, showed that dropsical effusion was not an essential, though a prominent symptom; for, out of eighty cases, there were twenty-two in which it was absent. Dr. Osborne, in the treatise now before us, powerfully supports Dr. Bright's opinion, to which he has become a convert "only by virtue of a long series of observations, many of which were instituted in the expectation of overthrowing it." As physician to Sir Patrick Dun's Hospital, his opportunities have been considerable. In the first part of the present treatise, published in the Dublin Journal, in January, 1834, he states that eighty-four cases had fallen under his notice of coagulable urine.

"Of this number examinations after death evince the disease of the kidneys in nine cases; while the remaining cases prove the existence of the same disease, so far as it is susceptible of proof, by similarity of symptoms, of cause, of collateral circumstances, and of *adjuvantia* and *ledentia*; and I can with truth aver, that I have witnessed many more cases which are not sufficiently detailed for the present occasion, but which, without any exception, corroborated the truth of Dr. Bright's proposition. The negative evidence in my possession is too copious to be detailed. It is, however, decisive as to the question at issue. It consists of numerous cases of dropsies, connected with diseased liver, impediments of circulation, or respiration, or general debility, which terminated fatally, in which the urine was examined before death, and found not to coagulate, and the kidneys were found to be free from disease; also cases ending fatally, but unconnected with dropsy, in which the kidneys were healthy, and the urine did not coagulate. This evidence appears to me peculiarly valuable, inasmuch as during the last three years I have anxiously sought for every opportunity of

examining the kidneys of every individual in whom the urine had been examined during life; and in no one instance have I met with coagulable urine without diseased kidneys, or healthy kidneys with coagulable urine." (P. 13.)

In January, 1835, the second part of Dr. Osborne's Essay was written, and he says:

"Since that time I have continued to enjoy the same opportunities of observation as before; and, though I have anxiously sought for evidence, either adverse or favorable to this opinion, I have not met with a single instance of urine coagulating in a constant manner, in which an opportunity of examination after death was afforded, that did not present the disease of the kidney; nor, on the other hand, an instance of the disease being found in the kidney after death, in which, on taking a specimen of the urine in the bladder, it did not coagulate." (P. 21.)

It is curious to observe how Dr. Bright's views have been confirmed by authors who preceded him, who incidentally mention the two circumstances, but who failed to trace the connexion. Thus, Dr. Wells and Dr. Blackall detail the history and dissections of nine cases of dropsy in which albuminous urine existed during life, and the kidneys were found diseased; but preconceived notions of the nature of dropsy prevented these physicians from tracing the connexion.

Such is the evidence in support of Dr. Bright's opinion, and the only facts which have been adduced against it are three cases published by Dr. Darwall. In two of these there was albuminous urine, and examination after death showed that "the kidneys were perfectly sound" in one, and in the other "the cortical part was paler," but without change of structure. In the third there was uncoagulating urine, although the kidneys were in the first stage (according to Dr. Bright) of organic disease: this patient however (as Dr. Osborne justly remarks) was scrofulous: now, as paleness of the internal organs frequently is observed in such cases, and as the first stage is with difficulty distinguished from the natural state, this instance does not carry any weight as an objection. In the second case the cortical part was paler than natural, and therefore not perfectly healthy. The first case consequently is the only one which seems to be an exception. The specific gravity of the urine is not mentioned.

Objections have been made on other grounds; such as the existence of albumen in the urine of those in perfect health, or after taking indigestible food, or mercury: but, if albumen is an ingredient in healthy urine, it does not exist in sufficient quantity to be coagulable by heat, which was invariably the case in this disease; and the other objections are founded on the *transitory* appearance of albumen, not on its *continuous* secretion in connexion with urine of low specific gravity. The co-existence of anasarca with coagulable urine after scarlatina has also been adduced to prove that the albuminous secretion cannot be fairly regarded as the consequence of organic disease, as this complication is so often a transitory complaint of little danger. The state of the kidney under such circumstances has not been sufficiently attended to, but, as far as the evidence goes, it is in favour of Dr. Bright's views. In a paper on scarlatina by Mr. Hamilton, in the Edinburgh Medical Journal,\* several fatal cases of dropsy following this eruption are related, in all of which the

kidneys were found in that yellowish mottled condition which marks the first stage of the organic change: more than one teacher of reputation is reported to have denied the connexion which Dr. Bright endeavoured to establish, when it was first promulgated; but the general terms in which these objections were couched, and the difficulties which invariably beset the admission of novelties when contradictory of firmly fixed opinions, render such statements of no weight in any estimate of the evidence bearing on this question. As our readers are now in possession of the facts on both sides, they can make their own decision. In forming, however, a decision, the kind of proof which a subject admits of should always be borne in mind. If it is considered necessary to establish the universality of the fact in order to its belief, a solitary exception, if well attested, and the limited number of cases, would be serious arguments for withholding our assent; but, on the other hand, if we are contented with as much evidence as can be procured in like cases and as the subject admits of, we shall give that qualified assent to the proposition which is sufficient for all practical purposes. We are not aware that the connexion between any one organic change and a sign or symptom has been established as an universal fact,—that there is one (so called) pathognomonic symptom in the rigorous acceptance of the term. Exceptions to the best established become more numerous the farther we advance in pathological investigations. Pneumonia, for instance, may occur without its characteristic expectoration, and even without expectoration at all; pleurisy without its fixed and pointed pain; and one half of the brain may become converted into a vast abscess without any appreciable disturbance in the intelligence. Under such circumstances we get over the difficulty by attributing it to idiosyncrasy, and, although the meaning attached to this term is not always very precise, and its application not sufficiently restricted, yet it serves the useful purpose of preventing the exception from rendering nugatory the vast body of affirmative evidence.

Regarding this kind of evidence as sufficient, because no other is attainable, it scarcely requires to be said that we think Dr. Darwall allowed an undue weight to the very few apparent exceptions which fell under his immediate cognizance, considering the mass of evidence on the other side which Guy's Hospital and the Edinburgh Infirmary had furnished; but that he should have done so is not surprising, as the exceptions happened at the very commencement of an enquiry into the truth of an opinion altogether novel to one who had studied the subject deeply and practically, but who had overlooked the connexion, and therefore was disinclined to believe it. Dr. Osborne candidly tells us that he himself began the examination of this question with a view to overthrow it, certainly a state of mind the most opposite to that with which a searcher after truth should begin his investigations; and, although we agree with him in his general conclusions, yet it strikes us that the manner in which he has argued the subject is marked with the same temper to which he confessed when he began his enquiries, as it savours more of the partisan than of the calm enquirer. On this account among others, we have preferred making our own statement of the points at issue, to reproducing Dr. Osborne's arguments.

The second part of Dr. Osborne's work is devoted to the consideration  
VOL. II. NO. III.

of the causes of this organic disease of the kidney, and its treatment. We have previously mentioned that Dr. Bright considered it probable that the renal disease was secondary, resulting from various hurtful causes influencing the kidneys through the medium of the stomach or skin. Dr. Osborne considers, from the following reasons, that it is produced most frequently by a suppression of the healthy secretion of the skin.

"The force of the circulation in this disease appears to be depressed by the action of some specific agency not as yet ascertained. The surface and extremities are uniformly cold—the latter being either livid or pallid; and, on reviewing my collection of cases, I find that in all of them the pulse was low, undulating, and ranging from sixty to ninety, except when they were complicated with inflammations; and that in those cases it was considerably less frequent than usual.

"The perspiration was either completely extinct, or confined to occasional breakings forth in the head or chest, the palms of the hand, or soles of the feet. The skin was dry and shining, harsh to the touch; and, on examining it with a lens, the usual eminences belonging to the orifices of the follicles were no longer to be found, and the orifices themselves were hardly perceptible, except when they appeared like black dots, in consequence of being filled with the residue of old secretions.

"Whenever general perspiration came on, either spontaneously or in consequence of medicine, then the cases always terminated favorably." (P. 26.)

"On reviewing the causes of the disease in thirty-six cases, in twenty-two individuals it could be directly referred to suppressed perspiration. One of these was Thomas Leahy, a remarkably vigorous man, in his thirty-fifth year, of sober habits. It appears that he was inconvenienced by the excessive perspiration of his feet, and that at the suggestion of a friend he wore fuller's earth in his shoes in order to repress it. The effect was immediate. The perspiration ceased not only in his feet, but also in every part of his body. Diarrhoea soon came on; and, when this was subdued by appropriate remedies, universal oedema, with coagulable urine, succeeded. Although, under the treatment adopted, the oedema was removed, yet the healthy action of the skin was never restored, and I am informed that his dropsy returned. In another of those cases the commencement of the disease was attributed to cold bathing: but the most frequent cause of it was remaining in wet clothes." (P. 32.)

The large quantity of perspiration constantly excreted in the healthy condition, and the immediate effect of cold in obstructing this, and in producing an increased secretion of urine, are adduced as additional reasons for supposing that any permanent suppression of perspiration would produce permanent irritation of the kidneys.

"The next frequent cause is the abuse of diuretic drinks and medicines. Of the thirty-six cases, ten occurred in confessed drinkers of ardent spirits." \* \* \*

"Diuretic medicines also have appeared to me to be a frequent cause of the disease. Squills and the diuretic salts, although of the utmost importance in many affections of the thorax, yet when long continued, as they often are after the true indications for their use have ceased, become the means of bringing such on again by producing over-excitement of the kidney, and this disease as a consequence." (P. 33.)

The close scrutiny which is necessary to detect the first deviations from health, and the few opportunities which are afforded to medical men of personal observation of these initiatory states of disease, account for the little accurate knowledge we possess on this most important branch of medical investigation; but the same reasons render caution advisable in believing new opinions on these matters. The views of Dr. Osborne on the causes of this organic renal disease have the great merit of leading to and explaining the rationale of a judicious and successful plan of treat-

ment. The coincidence of dry skin with the diseased secretion of urine, and the restoration of the skin to its normal state by warmth and baths bringing back the healthy secretion of urine, as well as the production of the disease very frequently by causes tending directly to suppress the perspiration, are strong, though not altogether conclusive, arguments. The intimate sympathy between the skin and the kidneys may explain the coexistence of unhealthy conditions of their functions, and the effect which remedies influencing the one function may exert on the other; whilst there may be a *tertium quid*, on which both the affection of the skin and of the kidneys mutually depend. In diabetes, for instance, there is a dry skin with a diseased secretion of urine, and a meat diet will diminish the quantity of urine, and improve its quality, whilst at the same time the skin becomes relaxed and moist; both the secretion of urine and of perspiration apparently depending (as far at least as can be judged from the "*juvantia*," ) on some disorder of the assimilative functions. To determine the question satisfactorily, proofs are necessary that an impaired state of the function of the skin precedes for some time the albuminous condition of the urine; for the bare fact, that causes which (among other tendencies,) check the perspiration frequently produce the disease, is insufficient evidence of its initiatory state. In estimating also the value of the proof resting on the effect of the diaphoretic remedies, it must be remembered that treatment directed to so extensive a surface of the skin must have a powerful effect on any local disease, whatever may have been its cause.

To the same cause, obstructed perspiration, Dr. Osborne attributes the inflammatory state of the mucous membranes which he found to coexist so frequently with this disease. Thus,

"Of the thirty-six patients, eighteen laboured under bronchitis in different degrees of intensity; eleven had gastro-enteric inflammation, denoted by thirst, vomiting, or diarrhoea; and the two diseases were in six instances combined in the same individuals. Thus it appears that nearly two-thirds of the entire number laboured under inflammation of the mucous membranes." (P. 35.)

The coexistence of affections of the mucous membranes has been remarked by other observers. Dr. Gregory particularly mentions diarrhoea and vomiting as among the most constant symptoms; in forty-six patients out of eighty, these were generally troublesome, frequently urgent, and untractable symptoms; but he differs from Dr. Osborne in his opinion as to their cause, as he distinctly states that they existed "without any distinct signs of inflammatory action."\*

The comparison of this disease with diabetes leads, we think, to a more satisfactory explanation of the nature of the concomitant affections of the mucous membranes than has hitherto been given. There are many points of analogy between the two diseases: thus, both are frequently produced by cold so applied as to check perspiration; in both there is a dry skin, with a disordered secretion of urine; and in both the restoration of the perspiration is a great step towards the cure. In diabetes, however, the quantity of urine is greatly increased; for as the skin no longer perspires, and the bowels are either constipated or not relaxed, the only exit for



superfluous secretion is through the kidneys : but, in the disease under consideration, neither the skin nor kidneys are outlets for the superfluous matter; for the skin no longer acts, and the urine, which is often scanty, is always deficient in solid matters (salts and urea); by means of the dropsical effusion some exit is obtained, but it is far from improbable, we conceive, that by the increased secretions from the mucous surfaces, producing diarrhœa and catarrh, the superfluous matter, which, under natural circumstances, would have passed off by the skin or urine, is evacuated from the system. The examination of forty-four fatal cases of this renal disease, reported by Dr. Gregory, in order to elucidate this matter, is most decidedly in favour of the view we have here taken of the nature of these excretions. The cases are divided into three sets: the first division contains fifteen cases of dropsy in which diarrhœa and vomiting were prominent symptoms; the second includes nine cases in which the thoracic organs were affected; and of these there was bronchial expectoration in seven, generally profuse; one died from phthisis, and the other from acute pneumonia. The third division comprehends twenty cases of albuminous urine and diseased kidney without dropsy; in sixteen of these, diarrhœa, vomiting, and bronchial affections were prominent symptoms; and the four remaining cases were inconclusive either way, as two died from typhous fever, one after lithotomy, and the other is superficially reported. Further proofs could be brought from physiology, such as the general analogies between the skin and mucous membranes; and, as far as the mucous membrane of the lungs is concerned, the fact which has been recently so conclusively proved by the experiments of Professor Tiedemann,\* that the lungs not only perform certain chemical changes on the blood, but act as a genuine secretory organ for the venous blood, by throwing off the volatile and unassimilable particles. If, therefore, these secretions from the mucous surfaces, so constantly coexisting with this disease, are the channels through which those superfluous excretions are evacuated which naturally are got rid of by the skin and kidneys, it follows that the restoration of the functions of the skin will be one of the best means of relieving the diarrhœa or catarrh; and the obstinacy of these symptoms to common remedies directed to their removal during the existence of the primary disease is explained.

The inefficacy of common diuretics seems to have first induced Dr. Osborne to change his remedies.

"When a patient was placed under my care, with general œdema, coagulable urine, and dry skin, I directed him to be kept in bed, in order to maintain warmth of the surface, which is usually disposed to be cold. It has happened frequently that, by external heat alone, an improvement both in the quantity and quality of the urine, and a material subsidence of the œdema, have taken place. The first medicine ordered was usually a purgative; and in the choice of this, in order to avoid ambiguity as to its mode of action, I abstained from the use of all those articles which are reputed diuretic; such as compound of jalap, or supertartrate of potash; and I generally employed the senna mixture. I then commenced a diaphoretic course, by administering foot baths, hip baths, or general baths; the last either of water or of vapour, according as they appeared to agree best with the individual case, at night at

\* No. I. of this Journal; p. 241.

the hour of going to bed. The patient also took at night eight grains of pulv. jacob. ver. 4. of pulv. ipecac. c. opio, and ten grains of confect. aromat.

"The usual drink was barley-water. In case, however, of tendency to stupor, or headach, the Dover's powder was omitted, or given in smaller doses. In one case, in which no perspiration was produced by the above and other means, it followed the use of the following mixture: R. Aq. Acet. Ammon. ʒiv. Sulphur. Subl. ʒj. Vini Ipec. ʒj. Ext. Opii aq. gr. ij. Aquæ Fœnic. dulc. Syrup. Sacch. empyreumat. utriusque ʒij., one ounce to be taken every hour.

"When the vapour bath was not attended by perspiration, from want of reaction on the part of the patient, he was directed to take, while in it, two drachms of the Tinct. Guaiaci Ammoniat; when, however, (as sometimes happened,) both vapour and water baths produced coldness of the extremities, they were discontinued." (P. 42.)

"When there was a continued tendency to coldness of the surface, unaccompanied by feeble action of the heart, the diaphoretic preferred was Tinct. Guaiaci Ammoniat. ʒij. Sulphuris Loti ʒj. Mist. Camph. ʒj. Sp. Piment. ʒss., or the following: R. Carbon. Ammon. ʒss. Mist. Camph. ʒvj., an ounce to be taken every two hours. In connexion with these remedies, administered in the evening with a view to procure a perspiration during the hours of sleep, warm applications were kept up during the day, and frequently a succession of bags of hot salt was maintained, when the heat of the extremities could not be otherwise preserved. When perspiration was restored in one part of the body, as in the trunk, but not in the limbs, the latter were rubbed several times during the day with an infusion of two drachms of bruised mustard seeds in distilled vinegar, with Naphtha, or some other suitable stimulating embrocation.

"Having never failed in removing this kind of general dropsy whenever the entire surface of the body was restored to a perspiring state, it is not surprising that I should bestow the utmost attention on this part of the treatment." (P. 44.)

"Next in importance to the restoration of the function of the skin, and indeed in most cases expedient, as contributing to that great object, was bloodletting." (P. 46.)

Where the indications were less decided, cupping the loins or leeching was employed; also cautious counter-irritation by means of lint steeped in tinc. lyttæ, and covered with oiled silk, a cleanly and rapid mode of vesicating. These were applied in rapid succession or kept open with iodine treatment. The common purgatives were given when necessary, and administered in the morning so as not to interfere with the diaphoretics. As relapses from exposure to cold may take place, flannel should be worn next to the skin, and baths and frictions used in case of dryness of the skin recurring; residence also in a warm climate is very advisable. Exercise should be carried to perspiration, if the strength permits, and bandages applied to the legs during convalescence. Complications require additional means. In dry bronchitis, copaiba and tincture of cubebs in small doses were advantageous; when the expectoration was copious for a long time, and impeded respiration, one grain of acetate of lead and a quarter of a grain of opium diminished the secretion and irritation. Leeches to the larynx unloaded the bronchial tubes, causing a cessation of cough and dyspnœa. Irritation of the stomach and bowels was relieved by leeches, warm applications, and a diet of rice and arrow-root. Dysentery commencing by tenesmus and general excitement was most speedily removed by an enema of four grains of nitrate of silver and eight ounces of water, followed in three hours by a starch enema with laudanum. In pericarditis, tartar emetic internally, with topical and general bloodletting, amended all the symptoms; and in valvular disease of the heart, a mixture of a small quantity of tincture of digitalis, with

carbonate of ammonia, camphor, and Hoffman's liquor, was followed by diminution of the violent action of the heart, a sense of general relief, and a capability of sleeping with comfort at night. In diseased aortic valves, a large issue over the region of the heart was of the highest importance. When ascites follows chronic peritonitis or indurated liver, and intractably remains after the general œdema is removed, Dr. Osborne recommends the following measures, which in his hands have rendered tapping seldom necessary. They may be continued when mercury and drastic purgatives are abortive, and the declining strength of the patient forbids such powerful remedies.

"These are the repeated application of leeches to the rectum, so as to unload the vessels of the vena portæ. The applications of various stimulants to the abdomen, as, 1st, an ointment composed of equal parts of iodine, mercurial, and cantharides ointments. 2dly. A paste formed of Spanish soap, spread upon linen, and sprinkled over with muriate of ammonia immediately before being applied; which, by the chemical decomposition that ensues, and the consequent gradual extrication of ammonia, produces heat and redness; 3dly. Sinapisms, suffered to remain till the pain becomes urgent. These have the advantage of healing with great rapidity. 4thly. Frictions of six or more drops of croton oil. These are, however, rather uncertain; in some individuals producing no effect, and in others followed by erysipelas, extending beyond the seat of the application. 5thly. A mixture composed of one part of tincture of digitalis, and two of aque muriat calcis; a teaspoonful to be rubbed on the abdomen, morning and evening. This compound appears to excite the absorbents, and increases the discharge from the kidneys, but does not produce any sensible redness of the skin." (P. 57.)

Tinnitus aurium, watchfulness, délirium, stupor, or headach, with increased heat of the head, are formidable symptoms, as death is frequently produced by a low form of arachnitis. Under such circumstances, Dr. Osborne recommends, besides bleeding from the temporal artery and by leeches, the free exhibition of calomel followed by brisk purgatives.

The length to which this notice has extended itself may appear to be disproportionate to the unpretending size of the work, but it furnishes more matter for an analytical notice than its appearance would indicate, for the results of the cases are only given, "as the details of cases (says Dr. Osborne,) attract little attention, and are in fact seldom read;" which, though perfectly true, is we think, notwithstanding, an insufficient reason for the omission; for, although the generality of readers may, either from want of time or from indolence, find it convenient to embrace conclusions without the trouble of reflection or examination, yet the careful student consults the details to settle doubtful points, and not unfrequently finds them of the highest importance as confirming new views which had escaped the observation of the original reporter. Thus, for instance, Dr. Osborne confirmed his own observations on the inefficacy of diuretics in this form of dropsy by a careful examination of the cases detailed by Dr. Gregory for quite a different object.

In conclusion, we have no hesitation in expressing our conviction that Dr. Osborne's work evinces much good sense, correct judgment, and considerable powers of observation; and that the plan of treatment he proposes is rational, judicious, and eminently calculated to prevent indiscriminate attempts to make the kidneys in all cases the channels by which dropsical effusions are to be evacuated.

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ART. XVII.—*On Diseases of the Hip-joint, with some Observations on Deformities of the Chest.* By WILLIAM COULSON, Member of the Royal College of Surgeons, &c.—London, 1836. 8vo. pp. 32; with a Plate.

THIS is the reprint of a Lecture published some time ago in the Medical Gazette; and, in noticing it, we must express our surprise that a surgeon of the well-known talent and experience of Mr. Coulson should have consented to its reappearance in a distinct form. It is an extremely good lecture to be delivered to students, and it formed a very appropriate communication to the respectable journal in which it first appeared; but, assuredly its contents do not entitle it to an independent existence; nor will it add, in any degree, to the well-established reputation of its author. It, in fact, contains nothing new, or nothing that is old put in a new light. At the same time, we may add that if any student, unacquainted with the subject, wishes to obtain good general notions of the nature and proper mode of treating the hip-joint disease, he will be gratified by the perusal of Mr. Coulson's pamphlet, and the inspection of the neat little plate (from Rust's *Arthrokakologie*,) which accompanies it.

#### ART. XVIII.—THE FOREIGN JOURNALS. No. III.

##### DANISH JOURNALS.

4. *Samlinger til den Danske Medicinal Historie, udgivne af Dr. J. D. HERHOLDT og Dr. F. V. MANSA. Kjobenhavn. 8vo.*

*Collections in the Medical History of Denmark, &c.*

THIS journal, which was edited by the veteran Professor Herholdt, recently deceased, and Dr. Mansa, is not on the plan of ordinary journals, although it is published in that form. It comes out irregularly, if it may not be termed an annual, since the first three numbers bear date 1833, 1834, 1835, respectively. It is entirely devoted to the illustration of the medical literary history of Denmark, and is therefore chiefly interesting to the profession in that country. It is a small work; the three first numbers only constituting a single octavo volume of 354 pages. Like most of the productions of our northern brothers, this work is of solid value, containing many historical notices and other interesting articles. We fear the death of its principal editor will be fatal to its continuance.

Besides the Medical Journals, strictly so called, published in the Danish language, (the whole of which we have noticed,) reviews of medical books are also occasionally to be found in two other periodical works chiefly devoted to general literature, the *Maanedskrift for Literatur*, and the *Dansk Literaturtidende*; the former published monthly, as its name implies, and conducted by twelve literary men; the latter published weekly, and without any avowed editor.

## GERMAN JOURNALS.

- 9.—*Medicinische Zeitung. Herausgegeben von dem Verein für heilkunde in Preussen.*—Berlin. Fol. 1836.

*Medical Gazette, &c.*

This journal possesses somewhat of a more corporate character than the other German Journals, inasmuch as it was set on foot by the Medical Society termed "The Prussian Medical Association," and is still the official organ of that institution. It is under the superintendence of a committee of the Society, consisting at present of the following members: J. N. Rust, Eck, and Grossheim.

The exterior of this journal reminds one of the original edition of the old Spectator, which one now and then meets with in the libraries of collectors. It consists of a single folio sheet, about the size of a common sheet of foolscap writing-paper, and consequently contains but four pages: an awkward supplement, consisting of a single loose leaf, is however frequently given; not a little indicative of the old-fashioned and slovenly habits of "The Trade" in Germany. The Gazette appears weekly, and costs yearly three dollars and two-thirds of a dollar, (about ten shillings of our money.) It is now in its fifth year, having been begun in Sept. 1832. It is a plain, sober journal, and somewhat of the gravest for a weekly publication. Beside the usual matters contained in the larger journals, it justifies its title of *Gazette* by giving various little pieces of medical news interesting to the profession; such as appointment to offices, the conferring of honours, changes of residence, deaths, &c. A marked and interesting feature in the character of the *Zeitung* is the numerous extracts which it gives from the official reports of the civil medical officers in the pay of government, distributed throughout the Prussian dominions, and which are furnished to the *Association* by the authorities. On the whole, the work is authentic and sound, and consequently valuable.

- 10.—*Zeitschrift für die Ophthalmologie.* Herausgegeben von Dr. F. A. von AMMON, Professor an der Chirurgisch-medicinischen Akademie zu Dresden, &c.—*Heidelberg und Leipzig.* 8vo.

*Journal of Ophthalmology.* Edited by Dr. F. A. von AMMON, Professor in the Medico-chirurgical Academy at Dresden, &c.—*Heidelberg and Leipzig.*

The taste—we should say, rather, the enthusiasm,—which prevails among the medical practitioners of Germany for the study of the eye, has doubtlessly been powerfully promoted by the periodical publications of that country, which, more or less devoted to the subject, have been conducted by men of the most distinguished talents and experience. We may mention particularly the *Ophthalmologische Bibliothek*, commenced in 1802, by Himly and Schmidt; the *Neue Bibliothek für die Chirurgie und Ophthalmologie*, by Langenbeck, in 1818; the *Journal der Chirurgie und Augen-Heilkunde*, by Graefe and Walther, in 1820; and, though last not least, the work now before us. A mine of truths is contained in these works, in examining which the reader may rise, time after time, with the renewed feeling of wonder that so many interesting enquiries have been instituted regarding the structure, functions, and diseases of a single organ, the study of which is still far from being

exhausted. Happy should we be, could we stimulate our British students to some small share of the spirit which has so long distinguished their brethren in Germany, and which is still stimulating to the elaboration of new and important facts the successors of Haller, and Zinn, and Wrisberg, and Meckel, and Soemmerring, and Beer, and Prochaska.

This journal has existed since the year 1830, and has reached its fifth volume. It is published quarterly, the four parts forming an annual volume, price three dollars. Each part contains from eight to nine sheets, or 120 to 140 pages; it is printed in the Roman type, and generally contains illustrative plates. It is composed of original memoirs, selections from other journals, and analytical and critical notices of works. It is pretty strictly confined to ophthalmology, and is conducted with great judgment by its learned editor, who has long been distinguished as one of the first ophthalmologists in Germany. It is a most valuable publication, and one which will supply us with much important matter.

#### AMERICAN JOURNALS.

- 4.—*The American Journal of Pharmacy*, published by authority of the Philadelphia College of Pharmacy. Edited by R. E. GRIFFITH, M.D.—Philadelphia. 8vo. 1836.

This journal had reached its twenty-fourth number, under the name of "The Journal of the Philadelphia College of Pharmacy," when this was changed, in April last, for the title above transcribed. It is published quarterly; each number consisting of five and a half sheets, and four Nos. forming an annual volume; the price, two dollars and a half. As the advertisement on its cover states, it "is devoted to the objects of pharmaceutical research, viz. Chemistry, Materia Medica, Zoology, Botany, Mineralogy, &c.;" and, judging from the numbers which we have seen, we should say that the objects proposed by it are ably and zealously pursued. Although we find stated among the reasons for changing the name of this journal, that the number of subscribers were hardly sufficient to meet the necessary expenses, we must say that the very existence of such a journal, and its existence for a period of seven years, is not a little creditable to the zeal and intelligence of our American brethren. We may add, that we think it *not* creditable to the profession in our own country that there is no journal among us devoted to the same objects. Germany, France, Italy have all journals of the kind, some of them more than one; and we are unwilling to think so badly of the members of the profession in Great Britain as to believe that such a journal would not succeed among ourselves. We are willing to take the responsibility of recommending such a publication; and we hope some spirited members of our profession, learned in chemistry, materia medica, and pharmacy, will yet, as editors of such a journal, thank us for our suggestion.

The *American Journal of Pharmacy* consists of three departments,—original communications, selected articles, and miscellanies. In the first we observe several valuable articles on Botany and Pharmacy, and many things both useful and interesting to the practitioner and pharmacist. In the numbers before us, we have been struck by the numerous notices respecting the adulteration of medicines; and no better argument

in favour of publications of this kind can be adduced, than the very fact of such adulterations being denounced, and the guilty agents exposed, in them. Certain it is that the adulteration of medicines has, in our own country, reached a most alarming height, and calls not only for the interference of the press, but for the strong arm of the law.

#### COLONIAL JOURNALS.

Under this head we shall include (whatever be the language in which they are composed,) the Medical Journals belonging to the colonies of all European countries; the whole, we believe, not forming a very long list. In a subsequent number we shall notice the only two English colonial journals with which we are acquainted, *The India Journal of Medical Science*, published in Calcutta, and *The Jamaica Physical Journal*, published in Kingston. On the present occasion we shall notice a journal of a *foreign* colony, (we believe we ought now to term it an independent state;) and some of our readers will probably be surprised to find any journal in a colony of which the mother-country (Portugal) is so low in general estimation for its medical institutions.

#### 1.—*Revista Medica Fluminense, publicada pela Sociedade de Medicina do Rio de Janeiro.*

*The Rio Medical Review, published by the Medical Society of Rio Janeiro.—Rio de Janeiro, 1835.*

This journal appeared only last year, and the fourth number, now before us, is for July. It is in 8vo., printed in a very fair type, and on pretty good paper, greatly exceeding in this respect the Jamaica journal: it consists of three sheets, or forty-eight pages, appears monthly, and each number costs 600 reis, (about 3s.)

The journal, besides giving the minutes of the proceedings of the Society, contains original papers written by its members, and selections from European journals. The original papers are more numerous, and, we must add, more valuable, than we expected to find them. Among other articles, the July number contains a Case of Perforation of one of the Sigmoid Valves, with Observations; a Case of Pustula Maligna; a memoir on the Medicinal Properties of Tobacco; a notice of the Domestic and Medicinal Plants used in the Province of Pernambuco, &c. Among the rest, we observe a flaming Discourse of Senhor Dr. Soares de Meirelles, on the bad effects produced on the health of the living by "the passing bell" for the dead! According to the "Discurso" of the learned Senhor, these effects are really terrible. He conjures his auditors to set at nought all that ignorance and fanaticism may urge; and, like bold men and sage doctors, never cease until they have succeeded in putting an end to this barbarous immolation of the living to the dead! "Por tanto, senhores, ainda que a ignorancia e o fanatismo bradem contra vos, concorreí com vossas luzes e esforços à fim de que os vivos cessem de ser victimas dos mortos!" Verily, the bells of Rio de Janeiro must be of most terrific toll, or the fellow-townsmen of Senhor Soares marvellously faint-hearted, if it is indeed true, as he tells, (and he says he speaks "without hyperbole,") that the custom he denounces has sent thousands to their graves: "o qual (sem hyperbole) tem levado à tumba muitos milhares de homens!"

## PART THIRD.

*Selections from Foreign Journals.*

## ANATOMY.

*On the Arteries of the Corneal Conjunctiva.* -By Dr. RÖMER, of Vienna.

THIS paper commences with a full and impartial account of the various opinions which have been entertained by different anatomists regarding the covering of the cornea. A very simple experiment, viz. throwing the eye of an animal into boiling water, shows that the cornea is covered externally by a membrane, which, although it be continued into the conjunctiva, differs remarkably from the latter tunic in physical properties, and is as strikingly different from the proper substance of the cornea. The membrane in question appears to be albuminous; for in this experiment it immediately coagulates and becomes opaque, while the palpebral and sclerotic portions of the conjunctiva suffer no such change. Dr. Römer regards the conjunctiva as a continuation of the common integuments, changed into mucous membrane on the inside of the eyelids, and again, on the anterior part of the sclerotic and on the cornea, transformed into serous membrane. He speaks of the Meibomian and caruncular follicles as the sebaceous glands of the conjunctiva; but, to our view, the Meibomian follicles open through the skin, not through the conjunctiva. It is well known that that portion of the conjunctiva which covers the internal surface of the tarsi or cartilages is villous or papillous, while the remainder of the membrane is comparatively smooth. It is the villi of the former which are so much enlarged and indurated in granular conjunctiva. They are considered by Eble\* not as secreting organs, but merely as nervous papillæ, like those of the skin or of the tongue; but the general notion is that they are mucous glands, and this appears to be the opinion also of Dr. Römer.

In the normal state, says Dr. Römer, the conjunctiva lining the inner surface of the eyelids is moderately red, while that portion which covers the eyeball is of a pearl colour, and only towards the angles of the eye presents occasionally some insulated red serpentine streaks, which are blood-vessels. After a tolerably successful injection, the conjunctiva of the eyelids presents a high red colour and a peculiar velvety appearance, bearing a striking resemblance to the Schneiderian membrane covering the septum narium, while from the ocular conjunctiva the pearly hue has vanished, and in its stead we find a rose-red colour, reaching in general only as far as the edge of the cornea. In a completely successful injection, the vessels are prolonged to the centre of the cornea, where they evidently penetrate and are lost in its substance.

The vessels which are distributed to that part of the conjunctiva which covers the anterior portion of the sclerotic and the cornea, are derived, as well as those which belong to the palpebral conjunctiva, from the lacrymal, the superior and inferior palpebral, and the oculo-muscular arteries. The small branches of these arteries form in that part of the conjunctiva which covers the anterior portion of the sclerotic, a superficial and a deep-seated network. The superficial network is derived from numerous branches arising from the superior and inferior palpebral arteries, and from the lacrymal. Dividing, as they proceed, into smaller branches, they run in a serpentine course towards the edge of the cornea, where they anastomose together in arches, and connect themselves with the deep-seated network. The deep-seated network is formed by much smaller vessels, partly derived from

\* Ueber den Bau und die Krankheiten der Bindehaut des Auges. Wien, 1828.



the oculo-muscular arteries, and partly from the ciliary, before these penetrate through the sclerótica. The ramifications of the two networks form at the edge of the cornea a vascular wreath, which lies just over the circular venous sinus of the iris. From every part of this wreath arise numerous minute ramifications, running towards the centre of the cornea, each dividing, as they run, into two or three still smaller vessels, which plainly dip into the substance of the cornea.

[We regard Dr. Römer's paper as a valuable contribution to the anatomy of the eye.] *Zeitschrift für die Ophthalmologie*, B. v. H. 1. 1835.

## PHYSIOLOGY.

### *On the Power by which the Head of the Thigh-bone is retained in its Socket.*

By Dr. EDUARD WEBER.

[At the meeting of German naturalists at Bonn, 25th September, 1835, a paper on this subject was read by Dr. Weber; and, on the following day, the experiments referred to in it were repeated before the Anatomico-Zoological Section of the Association. We shall give a translation of the greater part of this interesting paper, omitting merely the account of the experiments performed at the meeting, which were identical with those described in Dr. Weber's communication.]

It has been generally believed that it is through the power of the muscles or ligaments that the head of the thigh-bone is retained in its socket; and this, probably, because they are the first to strike our senses. A closer investigation, however, has proved that it is neither the muscles nor ligaments that effect this, but the pressure of the atmosphere. The head of the thigh-bone, enclosed in its air-tight cavity, remains in its place, on the same principle that the piston remains fixed in a cylinder, the upper extremity of which is closed with the finger; being forced by the air against the upper walls of its cavity, just as the mercury in the barometer is forced upwards by the same agent. The following experiments prove this fact:

1st. The trunk of the body was laid on a table in such a position that the leg and thigh hung down unobstructed. If the bone were supported in its place by the muscles and ligaments, it must clearly fall when the muscles and ligaments are divided. I divided the muscles and ligaments, and the limb did *not* fall: on the contrary, the bones constituting the joint remained in close contact, as before.

2d. If we admit that the limb is maintained in its position by atmospheric pressure, it is clear that it should fall down when air is admitted into the joint. I bored a hole through the wall of the bony cavity of the joint, and on the admission of the air the limb fell; and the displacement followed on boring the hole, even when the muscles and ligaments were not divided.

3d. If we assume that the atmospheric pressure is *alone* sufficient to maintain the limb in its place, the bone which had fallen down ought to be retained there when replaced and the air excluded. I replaced the bone which had been severed from the body, and excluded the air from the joint by closing the artificial opening with the finger: the limb remained supported in its place; and immediately fell down once more on the finger being removed.

I will only here refer to one instance of the practical application of this view of the mechanism of the thigh-joint,—the case known by the name of *spontaneous luxation of the thigh*. It is well known that, in this case, the bone is displaced without any obvious external cause, the limb being at first considerably lengthened, with marked lameness.

Since it has been shown that the head of the bone is not retained in its place by the power of the ligaments, it is not therefore necessary, for the explanation of the case, to admit that the ligaments must, previously to its occurrence, be lengthened, or (to speak generally) *altered*, in any way. Our experiments have shown that the head of the bone fell immediately from its socket into the inferior portion of the capsular ligament (in die höhle der kapsel herabsank,) upon the admission of air into the cavity of the joint. But, to produce this result, it is not necessary that air should be introduced from without: the same effect will follow the secretion of a fluid or the growth of a

solid body in the cavity of the joint itself. In proportion as such a substance, whether fluid or solid, accumulates, the head of the bone will necessarily fall down through its own weight, without the application of any force, and without the least resistance being opposed by the ligaments of the joint.

[The experiments at the Association were witnessed, among others, by Leuckart, Mayer, Schulze, Munk, and the two Webers; all of whom were convinced of the retention of the bone in its place by the pressure of the atmosphere.]

*Müller's Archiv. für Anatomie, &c. Jahrgang, 1836. Heft 1.*

## MEDICINE,

### **PATHOLOGICAL, PRACTICAL, AND THERAPEUTICAL.**

#### *On Thymic Asthma. By Dr. HIRSCH, of Königsberg.*

[Dr. KOPP read a paper on this subject at the annual meeting of scientific men at Heidelberg, which has since been published in a separate work by the author, (*Denkwürdigkeiten in der ärztlichen Praxis. Bd. i. Frankfurt, 1830.*) In the present memoir Dr. Hirsch has collected some additional cases, and has drawn up a digested account of the whole disease from collation of the various memoirs published on the subject in Germany, since Dr. Kopp first called particular attention to it. We shall give, in the first place, an abridgment of Dr. Kopp's original cases, and then an abstract of Dr. Hirsch's general observations.]

CASE 1. A delicate woman, with weak lungs, who had suffered from atony of the uterus after confinement with her sixth child, was brought to bed, for the seventh time, of a puny male infant, which, notwithstanding it was well fed, continued extremely emaciated. From its birth to its death, it frequently held its breath. This difficulty in breathing was at first hardly remarked, but it increased extremely, and came on particularly on waking, swallowing, or crying. It died in the seventh month, in a fit of suffocation with convulsions. An examination was not made, nor did the case make much impression on Dr. Kopp, until he had seen two similar cases in the children of the same mother.

CASE 2. A brother of the first infant, born at the full term, having a delicate constitution, but enjoying good health for the first four months, began from that period to be affected similarly, by a suspension of respiration at intervals, attended each time with a slight plaintive cry, coming on suddenly, and evidently producing pain. After gaining its breath, it testified by its cries the pain and anxiety it had suffered. During the paroxysm, the pulse was irregular and intermitting, eyes fixed, hands and feet cold, face puffed and bluish, and tongue pushed out between the teeth. The attacks increased in frequency and violence, but with this exception the health was not impaired. After an attack of catarrh when the child was ten months old, they increased greatly, and the child died in one of the paroxysms in a state of asphyxia; the face puffed and blue, and the tongue thrust between the teeth.

*Examination, twenty-two hours after death.* Tongue rather long, and thickened at the root; trachea healthy; thyroid gland tumefied; sanguineous extravasation covering the trachea at the junction of the thyroid and thymus glands. Thymus so large and thick, that an assistant took it for a lobe of the lung; extending from the thyroid gland to the diaphragm; two inches broad, weighing more than an ounce, and pressing against the trachea, where the effusion had taken place: on cutting it, much milky fluid, which had penetrated its whole substance, escaped; it was nowhere indurated. Lungs brownish red, gorged with blood, as in asphyxia. Heart flabby and atrophied. Foramen ovale open.

CASE 3. Twenty months after the death of the last child, the mother was confined with another boy, of a similar constitution, but rather stronger. Fifteen weeks after its birth, the same symptoms as in the other two cases commenced, so that the mother recognized the disease; there was also spasmodic contractions of the hands and feet. The treatment consisted in leeches to the epigastrium, calo.

mel, lavements of valerian and musk, frictions with white precipitate, which caused an eruption followed by some amelioration. Under these means the nervous symptoms diminished, and, after taking six baths of infusion of chamomile and valerian, (which were discontinued, as they exhausted,) the paroxysms diminished in frequency, so that many days were passed without any. On examining the chest, the pulsation of the heart could not be discovered. Sometime afterwards, without any known cause, there were slight spasms of the hands and feet, with abdominal pain, contraction and slight swelling of the features, and protrusion of the tongue. Flowers of zinc, musk, ipecacuanha, and calomel, were of temporary benefit; and sometimes the paroxysm was shortened by laying the child on its face, and gently patting its back. The child however emaciated, its digestion was affected, and it vomited and had whitish and greenish stools; the paroxysms returned with violence, and in one of them it died asphyxiated, in the twenty-second week of its existence.

*Examination, twenty-seven hours after death.* Thymus very large, occupying the whole anterior part of the thorax, and adhering strongly to its superior part: it touched the thyroid gland, and covered the heart; it weighed an ounce; it was infiltrated with a milky fluid. Tongue large, thick, and protruded between the teeth. Glottis free; trachea healthy; heart flabby; foramen ovale closed; right lung gorged with blood; pulmonary tissue otherwise healthy, and floating in water. Cerebral substance slightly softened; abdominal viscera sound.

The two following cases were communicated to Dr. Kopp by Dr. Rullman, and they were both children of the same mother.

*CASE.* The disease began during the third week, and the symptoms were exactly similar to those detailed by Dr. Kopp. In the twenty-first month, the child, whilst playing, stooped to pick up something he had dropped: he was immediately attacked with vertigo, and fell backwards into his father's arms; his face turned red and blue, his limbs became rigid, his skin pale, the stools and urine escaped involuntarily, and the child died suffocated. On dissection, it was found that the thymus extended from the upper border of the sternum to the diaphragm, covering not only the trachea and pericardium, but the whole anterior surface of the lungs. Its texture was rather firmer than usual, granulated, and infiltrated with a milky fluid. Lungs small, compressed, and gorged with blood, but otherwise healthy.

The other case was more fortunate. The same symptoms came on about the third month, and were aggravated at the sixth month, owing to dentition. As Dr. Rullman was aware of the cause, he adopted more suitable means: he prescribed Plummer's pill (in powder) with hemlock, applied a blister to the sternum, recommended low diet, fresh air, and the avoidance of any sources of disquietude. Gastric or catarrhal symptoms were carefully combated. During the first eight weeks there was no improvement, and the symptoms were aggravated whenever a tooth was cut: then purgative doses of calomel were useful. From this time the symptoms improved, and at the end of the second year the child was well. He is now nine years old, and quite healthy.

[The memoir of Dr. Hirsch contains five cases which are so similar to the foregoing ones, in every important particular, that we shall not give the details. The first was in a female infant, and no examination took place; the other four were boys. Two of these died, and the thymus was found enlarged; the other two lived. The treatment consisted in applying leeches and counter-irritants to the sternum, and giving calomel and rhubarb internally. In one case, small doses of Aqua lauri cerasi and musk were also prescribed. We shall now pass on to the general history of the disease, treatment, &c., as collected by Dr. Hirsch from his own cases and those of others.]

It is characterised by attacks of spasm of the chest and severe fits of suffocation. The breathing suddenly stops, or rather there is an extremely slight, piping, imperfect inspiration, forced, as it were, through the contracted glottis. The respiratory sound has some resemblance to the crowing inspiration of whooping-cough, but is much smaller and more acute; it is still more like the choking attempts at inspiration made during the hysteric spasm. In some cases, but rarely, there may be five or six piping or whistling inspirations, and then a few deeper and stronger,

alternating with expirations so slight as scarcely to be perceived. In extreme attacks, the respiration stops *entirely*; the small inspiratory pipe then takes place, either in the beginning of the paroxysm or in its termination, being quite suppressed during the strength of the attack; and this symptom is pathognomic of the affection. The other symptoms are necessary consequences of the suppressed respiration; the body is extended forcibly backwards or the limbs drawn close up together; the face, which is fixed and expressive of great distress, is either purple or quite pale; the nostrils are expanded, the eyes fixed, the hands cold, the thumbs contracted, with involuntary dejections, &c. After a period of half a minute or a minute, occasionally even two or three minutes, the paroxysm ceases; the infant then cries for a short time, and immediately becomes cheerful and easy. When the constitution is very feeble, however, or the attack has been very severe, the child remains some time languid, pale, and sleepy. In the intervals of the paroxysms the child is quite well, without the slightest affection of the respiration. Kopp says that the tongue still continues to be thrust out more than is natural, but this is certainly not always the case. The attacks come on chiefly when the child awakes, at other times after crying or fretting, or from any cause that excites the lungs to increased action. At first the attacks are not frequent, coming only once in eight or more days; but they grow progressively more frequent, till they come on ten or twenty times in one day. In this stage, death often takes place in the paroxysm, although the little patient had been playing about a minute before, apparently in the most perfect health. More frequently, however, another stage succeeds before death, characterised by general convulsions of an epileptic kind; the convulsions sometimes alternating with, sometimes accompanying, the asthmatic paroxysms. In the intervals, the lumbrical muscles of the palm and the adductors of the thumb are sometimes permanently contracted, so as to maintain a rounded form of the hand. In these cases the child is carried off in a paroxysm, with symptoms both of suffocation and apoplexy, or quite suddenly, without any affection of the chest or prolonged agony of any kind.

On examination, besides the general appearances always following death from suffocation,—such as blueness of the skin, congestions of blood in the lungs and brain, &c.,—the thymus gland is always found considerably enlarged. The degree of enlargement varies extremely, as does the natural size of the gland. At times it is enlarged chiefly in length and breadth, more commonly, however, in thickness: in the last case the lungs are frequently thrust back by it into the posterior part of the chest; on other occasions, the gland is found closely connected with, and even surrounding, the large arteries and venous trunks of the thorax or neck. The texture of the gland is either quite normal or (what is more common) somewhat firmer and more fleshy and redder, but without the least trace of induration, suppuration, tubercularization, or other form of degeneration. In cases where the gland has been weighed, it has been found to vary from six or seven up to fourteen drachms. However, it would seem to have been still larger in some cases where it was not weighed.

The duration of the asthma of Kopp is very various, depending generally on the severity of the attacks: it commonly lasts some months. Children of a scrofulous habit are particularly subject to it, and boys especially, if indeed not exclusively. All diseases of the respiratory organs predispose to it,—such as catarrh, bronchitis, croup, hooping-cough, measles. Teething also predisposes to it.

Thymic asthma is far from being a rare disease, and has been noticed by many writers, who have given it other names. The principal of these is Marsh, who describes it under the name of *spasm of the glottis*, Kellie, Porter, Pretty, Richter, and perhaps North. Even the enlargement of the thymus gland as a cause of asthma in children has been recognised by several authors previously to Kopp, and particularly by Hood. (*Edinb. Journ. of Med. Sc.*, vol. iii.)

*Nature of the Disease.* It is an affection peculiar to early infancy, and consists of a periodical tonic spasm of the lungs, larynx, and glottis, perhaps also of the heart, eventually extending to the whole nervous system, under the form of epileptic convulsions. In it the thymus gland is more or less enlarged, but otherwise not diseased, and presses on the heart, bronchi, and large vascular trunks,

impeding their functions. When, on examination after death, such an enlargement and abnormal compression exist, one need not seek further for proofs of the nature of the disease. Yet there have been many arguments adduced against the accuracy of this judgment, of which the following are the principal:

1. Great enlargement of the thymus has been found, without the presence of asthma.

2. The affection termed the asthma of Kopp has been observed when the thymus was not enlarged.

3. An organic disease cannot occasion periodical attacks, leaving intervals of perfect health.

4. The enlarged thymus ought to excite symptoms of cardiac disease, while the suffocation in the disease of Kopp is evidently the result of constriction of the trachea and glottis.

5. The course, frequent cure, and occasional relief from antispasmodic remedies, are incompatible with the existence of an organic disease.

6. The enlarged thymus may be a consequence of the asthma, and not the cause.

*Prognosis.* The disease is always dangerous, but not desperate, particularly if the child is strong, and not disposed to catarrhal affections; also when the case is recent, the spasms not frequent nor severe, and no general convulsion has taken place.

*Treatment.* The following are the principal indications:

1. In the attack nothing more can be done than to place the child in a proper position, to rub its spine, perhaps to dash cold water on it, &c.

2. After the attack, to give antispasmodics, preparatory to the employment of means directed to the chief pathological state.

3. To diminish and prevent the recurrence of all undue congestion and nervous excitement in the heart and lungs, by low diet, large and frequent local bleedings (every four or eight days,) blisters and issues on the chest, constant powerful purgatives, &c.

4. To lessen the size of the thymus by anti-scorfulous, resolving medicines,—such as mercury, iodine, &c.

[We have been induced to present to our readers the foregoing account of the affection there denominated *Thymic Asthma*, with the view of calling the attention of the profession to a more accurate investigation of its nature and all its causes, and not because we subscribe to the general accuracy of the statements and opinions therein contained. It is hardly necessary to inform the English reader that the affection noticed in the present paper was long known in this country previously to the publication of Dr. Kopp. This is indeed admitted by Dr. Hirsch; and all pretence to originality in the views of Dr. Kopp respecting its cause is removed by the reference made by him to the paper of Mr. Hood, in the *Edinburgh Journal of Medical Science*, published in January, 1827. In this paper the existence of the enlarged thymus in such cases is proved by numerous dissections, and recognised by the author as a cause of the disease. The title of *Koppian Asthma*, bestowed on this disease by Dr. Hirsch, is evidently improper; and that of *Thymic Asthma*, given to it by Dr. Kopp himself, is no less so; since it can be demonstrated to have often existed without any morbid enlargement of the thymus gland. At the same time we do not doubt that such an enlargement is occasionally present, and operates as an exciting cause of the affection. The whole subject assumes at this moment a more striking interest from the publication of Dr. Ley's work on the same curious affection, and denominated by him *Laryngismus stridulus*, of which notice is taken in another part of this Number. We may refer our junior readers for a neat epitome of the history of this disease, with references to the principal original writers on it, to the article *Spasm of the Glottis*, by Dr. Joy, in the *Cyclopædia of Practical Medicine*. Dr. Joy, however, takes no notice of the *Thymic* theory of the disease, and refers neither to Mr. Hood nor Dr. Kopp.]

*Hufeland und Osann's Journ. der Prakt. Heilk., Jul. 1835.*

*Illustrations of the Diseases produced in Man by the Affection termed Glanders in Horses.* By Dr. ALEXANDER, of Utrecht; Dr. BERRA, of Mantua; and Dr. FENELLI, of Ostiani.

[ALTHOUGH the occurrence of morbid phenomena of the greatest severity in the human subject, from the contagion of Glanders, is no longer a novelty, we believe the following narratives will be found to contain matter that is both new and interesting; particularly the pestilential epidemic, for it may be so termed although on a small scale, recorded by the Italian physicians. We presume that no rational doubt can exist of the derivation of all the cases from the alleged source.]

I. *Cases of Glanders in Man.* By F. S. ALEXANDER, M.D.

CASE 1. A Lancer, aged forty, employed in taking care of a glandered horse, was brought on the 13th of April, 1829, to the hospital; he first declared himself ill on the 7th, but had not been well for some time previously. He complained of pain in the limbs; and, on examination, several unequal swellings were discovered, one on the fore-arm, another on the left knee, a third on the calf of the left leg, which rendered motion painful, were elastic to the touch, and of the natural colour of the skin.

In the beginning of May the patient continued to lose flesh, and had night sweats; the gums bled; the swelling on the arm diminished; the others remaining stationary. In the beginning of June a mercurial liniment was rubbed over the tumours; some of which diminished, others disappeared: one on the leg, however, enlarged, grew painful, and was opened on the 11th with caustic; bloody pus was discharged. The cough grew more severe in August, and there was constant diarrhoea; on the 16th of that month the patient died, much emaciated.

*Examination forty-eight hours after Death.* The openings of the abscess were found extending round the muscles; the cellular substance was destroyed completely; the muscular fibres remained, although wasted and of a yellow colour; the matter in the tumours was so viscous that it did not escape; in the arm, no trace of the former tumour was found. The lungs were found adhering to the costal pleura; some parts were hepatized; others contained tubercles, crude, softened, or purulent. The mucous membrane of the trachea was inflamed; the heart appeared healthy; the intestines in the normal state, neither inflamed nor ulcerated. The brain and spinal marrow were not examined.

CASE 2. An artillery man, nineteen years old, after he had assisted in the infirmary for horses for four weeks, was seized suddenly with fever, violent stitches in the side, and pains of the lower extremities. In five or six days the fever and stitches left him, but the pains in the legs continued. On the 4th of June, 1831, he entered the hospital. On the 11th, a painful swelling arose on the calf of the left leg; on the 16th, a similar tumour appeared near the elbow of the forearm.—17th. Two more tumours were perceived on the leg and arm; the first tumour on the arm became of a violet colour, soft, and somewhat fluctuating. The right eyelid, swelled and inflamed, was opened with difficulty.—20th. Solitary pustules arose on the forehead, soon ran into each other, and were hid by a black scab covered with pus, which escaped from the skin in several places. Dr. Alexander now ascertained that some of the horses in the infirmary where the patient had been had glanders.—24th. The erysipelatous inflammation of the face spread, and the left eyelid was swollen, oedematous, and closed.—25th. The inflammation and pustules extended to the left cheek; the alae nasi were covered with a dirty green, viscid mucus. The patient complained of difficulty of swallowing.—28th. The pulse was quick and small; respiration regular; the forehead blue; the patient was sleepy.—February 1st. Delirium; the tongue was tremulous, and put out with difficulty; there was intolerable thirst; the urine and stools passed involuntarily; the nose and left cheek were black.—Feb. 2d. The patient lay unconscious, swallowing with difficulty. He died at ten o'clock in the evening. Duration of the disease, eight months.

*Examination on the day after Death.* Several parts of the body were found covered with bullæ, filled with a bloody fluid. The lungs were adherent

in many points; their surface was everywhere, with the exception of the superior lobes, spotted with tubercles softened in the centre; in the substance of the lungs, however, no tubercles were discovered. The trachea and bronchi were filled with a tough mucus; the blood in the aorta was coagulated. Solitary red spots were visible in the œsophagus, stomach, and intestines. The mucous membrane of the nose was ulcerated in many places, and covered with tough mucus. The velum palatinum, the bronchi, and epiglottis, were in part destroyed and covered with ulcers and mucus. The salivary duct was inflamed, thickened, and filled with pus; ulcers were disseminated over the larynx. Twigs of the facial and frontal nerves were inflamed; the temporal artery passed uninjured through the gangrenous parts. The brain was in the natural state. On dissecting the extremities, small purulent tubercles were found in the muscular as well as the cellular substance. The nerves were in the natural state, except where they passed through abscesses; the veins contained no pus; the lymphatics were dilated; the glands swollen; the fibula and ulna were denuded in several places.

Dr. Alexander infers that slighter cases of glanders in the human subject may be overlooked, from the circumstance that he treated another soldier of the same corps, about the same time, in whom the disease at first seemed likely to pursue a similar course: its violence, however, abated, without developing any local affection; it became lingering, and took on the form of an irregular nervous fever. After remaining dangerously ill seventy-two days, he however recovered, probably from possessing a strong constitution. In another case, a red spot appeared on the forearm of an artillery man, who had previously been cleaning a horse that had glanders; pustules broke out, and an abscess was formed, which, when opened, discharged pus. This did not cicatrize, but left a spreading ulcer, the edges of which, when the man came, on the 18th of June, to the hospital, appeared callous; a tough, ash-coloured, caseous pus was secreted. The ulcer healed in April, 1833, the thirteenth month of the disease.

*Hufeland und Osann's Journal*, 1835, B. 2, h. 2.

## II. Carbuncular Typhus, occasioned by the Glanders in the Horse.

### *First Series of Cases.* By GIUSEPPE BERRA, M.D.

Luigi Carnalengi, a miller of San Benedetto in Mantua, had in his stable two glandered horses, and his brother Martin had a mare, a mule, and an ass, affected with the same disease. The first person attacked was Natali, son of Martin, who took care of the three glandered animals, and slept near them during the whole of the spring. His illness began about the middle of March, and he died towards the latter end of the month. Andrew, son of Luigi, æt. six, who used to play in the stable and wipe the noses of the horses, was taken ill in the middle of May, and died on the 7th June. While Natali was ill, Martin, æt. fifty-eight, did his work for him, and experienced the same effects. He sickened June 8th, and died in ten days. Charles, son of Martin, æt. ten, who had long assisted his father and brothers, was seized June 2, and died on the 30th.

The disease began in all with either a slight intermittent quotidian fever, or with a tertian with gastric symptoms: next came on pains in the joints with a rather violent continued fever; the pulse hard and full, and all the symptoms of a rheumatic attack. After some days an extraordinary calm succeeded, followed however in a day or two by an exacerbation of all the symptoms, as hard pulse, flushed face, foul tongue, open bowels, hot skin, scanty urine, and a fixed and oppressive pain in the chest. The blood exhibited a remarkably hard clot, without the bleeding being followed by any good result. The fever became more ardent with the progress of the disease, and was attended with delirium, tremors, convulsions, meteo-rism, difficult deglutition, very dry tongue, and grave cerebral symptoms, with an almost continual stupor.

At the same time that the remission of the fever took place, very minute red spots appeared upon the face, soon surmounted by a white head, which passed rapidly into pustules of varied figure and dimensions, some remaining as small as millet seed, others with their areola becoming as large as a split walnut, and all containing

a true pus. They did not all burst; and those that opened spontaneously after a longer or shorter time, left deep foul ulcers of a violet colour at their bottom. This did not occur in those that were opened accidentally or with the scalpel. The pustules were of a lead colour and contained a yellowish fluid, inodorous but particularly acrid. In one case they occurred more particularly upon the face, of the size of nuts, confluent, and leaving, after they had burst, an ulcer extending from the forehead to the zygoma and upper lip. Besides these pustules, red scattered spots of different sizes appeared, similar to phlegmonous erysipelas, which remained in the same state without proceeding to suppuration. With these typhoid and exanthematous symptoms, the disease advanced, till the patient, having lost his external senses at the end of the second or third week, died after a most painful and distressing struggle.

*Second Series of Cases. By Signor FENELLI.*

The disease exhibited two distinct periods; one marked by simple fever, the other by the eruption. The precursory symptoms were universal muscular pains, and failing of appetite, sleep, and strength, without any loss of spirits. The attendant symptoms were rigors, pains as if the individual had been beaten, oppressive headach, heat and dryness of skin, mucous crust upon the tongue, urine red, pulse rapid, full, and regular, blood thick and buffed.

After the seventh day, the second period came on with diminished fever, but with great oppression of the chest, delirium, and restlessness at intervals, and partial sweats. The face of all the patients was drawn, and their urine deposited a sediment; but there never was any epistaxis. On the backs of the hands and feet a red swelling arose, attended with lancinating pains, and terminating in gangrene and sphacelus. Besides these parts, others were similarly attacked by gangrene, particularly the face. After the falling of the eschar, an unhealthy ulcer, distilling a fœtid ichor, was left in those who survived up to this time. Besides the gangrene, purulent phlyctenæ, pustules, and papulæ, arose on different parts of the body; but in one woman, who died on the sixteenth day, nothing but livid marks were observed.

The disease lasted from nine to twenty days, with a constant decrease of the strength and great præcordial anxiety, till the patients died in a state of stupor. One woman died thus after the fiftieth day, and another after the sixtieth, in whom, after an apparent healing of the ulcers, a general eruption broke out like scarlatina, followed by another crop of carbuncles. Every case being fatal, the treatment does not admit of remark. No examination of the bodies was made, from fear of contagion; but the disorder was confined to twelve persons who had attended upon diseased horses, and none of those who waited on the sick were attacked; although the curate, who attended them all in their last moments, had an attack somewhat similar, from which however he recovered.

*Antologia Medica, No. ix. Settembre, 1824.*

*New Mode of administering Balsam of Copaiba. By M. RATIER.*

M. RATIER is now in the constant habit of prescribing balsam of copaiba for gonorrhœa, enclosed in small capsules made of gelatin. They each contain eighteen grains of the balsam, and are sufficiently thick to prevent their breaking in the mouth, or giving a disagreeable taste, and yet readily soluble; whilst, from their small size and oval shape, they are swallowed with facility. M. Ratier generally directs half the number prescribed daily for internal use, to be introduced into the rectum, which is easily done if they are covered with oil or suet. As mentioned in our last Number, M. R. has been long in the habit of directing his patients to throw into the rectum, by means of a small syringe, one or two teaspoonfuls of the copaiba emulsion, at the same time as he ordered it to be taken by the mouth; but these capsules are in all respects preferable. They were invented by MM. Dublanc, Sr. and Mothes, and are formed by a particular instrument.

*Bulletin Général de Thérapeutique, Decembre, 1835.*



*On the Effects of Indigo in Epilepsy and other Spasmodic Affections.*

By Dr. ROTH, of Mayence.

A Number of the *Salzburg Med. Chir. Zeitung*, for 1832, contains a paper on this subject by Prof. v. Leuhossek, wherein it is stated that Prof. v. Stahly, of Buda, had been the first to administer indigo in spasmodic affections, and that the successful results had been noticed in an inaugural dissertation on epilepsy, which appeared at Buda in 1832. This was followed in 1833 by an article in the "*Med. Zeitung*" by Dr. Grosheim of Berlin, who, it appeared, had employed indigo with entire success in an epileptic case which had previously resisted every other kind of treatment.

These precedents were the occasion of a series of trials being instituted at the Charité at Berlin, by Dr. Ideler, superintending physician of the wards for spasm and insanity, and by Prof. Wolff, chief physician to the other medical wards, as well as by Dr. Leinveber, one of the staff physicians at the Charité.

Although in the selection of cases attention was paid to the remark of Leuhossek that indigo only acted beneficially in the epilepsy directly depending upon abnormal sensibility and reaction of the nervous system, (abnormer sensibilität und reaction,) the remedy was nevertheless tried on a considerable number of patients; it being frequently difficult to decide whether epilepsy is idiopathic or merely symptomatic, and it also often happening that cases originating as the latter degenerate into the former. At the period when these experiments were made, the greater number of epileptic cases at the Charité differed from each other only in their degree of intensity, and the seat of the affection appeared to be either the brain itself or the cerebral nerves. In no instance did the spinal cord seem to be the chief seat of the morbid action. Most of the patients had already gone through the ordeal of the most powerful remedies without material benefit. At the same time subjects whose epileptic attacks were the consequence of external injury of the head, such as contusions, &c. were not excluded from the trials.

Dr. Roth had an opportunity of witnessing the experiments during a period of eight months, and the following are the general results obtained by him:—The remedy is beneficial in all cases of true *idiopathic* epilepsy, curing those of recent origin and improving [i. e. modifying both the violence and the frequency of the paroxysms] those of long standing. On the other hand few cases of *symptomatic* epilepsy were ameliorated—none cured,—by this treatment.

*Of the Effects of Indigo on the System.* Prof. v. Stahly appears to have been led to the administration of indigo from having observed that the hands of *sickly* indigo-dyers were permanently tinged with blue, which was not the case with dyers in full health. During the first days of its employment, says Dr. G. v. Stahly, jun.,\* "the patients are affected with a slight diarrhoea, which however ceases spontaneously when the indigo begins to be more easily assimilated with the digestive organs. Even from very large doses, to the amount of two ounces, no other visible effect is produced beyond that of the urine and perspiration assuming a blue colour." Dr. Roth however affirms, that with the greater number of patients very different phenomena are observable. In most instances a sense of constriction at the fauces and the impression of a metallic taste on the tongue shortly succeed the first administration of indigo, although the medicine itself is perfectly tasteless. Nausea, inclination to vomit, &c., with delicate persons even vomiting, follow in succession: at times the retching is so violent as to preclude the further use of the remedy, whilst in the other cases the nausea continues for two or three days, and then gradually subsides. The retching and vomiting produced by indigo differs somewhat from those which are the effect of common emetics; the contractions of the abdominal muscles and of the diaphragm being less violent, and the act not being succeeded by the usual feeling of distress and prostration. The egesta present no peculiarity except in their blue colour. After all inclination to vomit has ceased, a diarrhoea usually takes its place, increases rather than diminishes as the treatment proceeds, and lasts during the whole time that the indigo continues to be administered. Thus from four to six stools of a semifluid consistency and a blue-

\* In the dissertation already alluded to.

black colour are produced daily, with the accompaniment of slight gastro-enteric pains, which are likewise observed during the period of nausea and retching, and are in rare instances so violent as to proscribe the further use of the remedy. The protracted diarrhoea ultimately brings on dyspeptic symptoms with vertigo, &c. In one or two instances, the bowels remained obstinately constipated instead of being relaxed. Indigo does not appear to increase the quantity of the urine, but invariably to tinge the latter of a dark violet hue, paler in the urine secreted at night than in that of the morning.

Dr. Roth has never found that indigo affected the colour of the perspiratory matter. Slight spasm and twitchings of the tendons sometimes arose after the treatment had lasted for a few weeks.

*Form of Exhibition.* The experiments were made with the Guatimala Indigo of commerce [from the *Indigofera Disperma*, or the *Argentea*.] The best mode of administering it is in the form of an electuary, in which one portion of indigo is combined with two of syrup and a small proportion of water. In the form of powder it is apt to occasion distressing spasm at the isthmus faucium. Its tendency to produce diarrhoea may be corrected by the simultaneous use of mild tonics or astringents. The pulv. *ippecacuanhæ comp.* was found to answer this purpose sufficiently well.

*Dose.* Small doses appear to be wholly ineffectual. If the remedy agrees with a patient at all, it is necessary to commence with tolerably large doses, which may be gradually augmented to an ounce or even more, according to circumstances, per diem; the corrigents to be increased in the same proportion. The treatment it may be necessary to continue for three or even more months.

*Effect on Epileptic Patients at the Charité.* At the commencement of the treatment, the frequency of the paroxysms was in every instance manifestly increased. Each attack was of shorter duration than formerly, but more violent; the subsequent prostration therefore more considerable. The premonitory and soporous stages were less prolonged than usually.

After from one to eight weeks, according to the dose administered, all the above phenomena gradually began to abate. In the successful cases the paroxysms diminished in frequency, duration, and violence, and the last attacks amounted to no more than slight shiverings and inconsiderable twitchings.

The total number of cases of epilepsy treated with the indigo was twenty-six. It has already been stated that only those were cured by it whose epilepsy was idiopathic. The number of cures witnessed by Dr. Roth amounted to nine males and five females. Eleven others were relieved, whilst in six cases the complaint underwent no improvement. Dr. R. was particularly struck with the instance of a boy, aged sixteen, who for eight years had been the victim of chorea St. Viti, to which epilepsy had supervened, but who was radically cured of this double affection by a six-weeks' use of indigo.

*Hecker's Neue Annalen. Erster Band. Erstes Heft. Berlin, 1835.*

#### *Case of unusually prolonged Sneezing, cured by Snuff.* By Dr. BAUWENS.

[THE following case was read before the Society of Medical Sciences of Brussels, and is remarkable no less for its severity than for the simplicity and speediness of the cure. If homœopathy could adduce many such marked illustrations of the power of remedies administered according to its formulæ, and on the principle acknowledged long before it, as occasionally a faithful guide in practice—*similia similibus curantur*,—it would meet with less opposition from the enlightened members of our profession.]

Caroline D. æt. eleven and a half, was attacked, on November 18th, 1834, with fits of sneezing, which gradually increased in frequency, so that they came on every quarter of an hour, and continued until the 8th of January, 1835, when Dr. Bauwens first saw her. Although delicate, yet she had always been healthy, and all her functions were natural, except sleep, which was interrupted by the sneezing. This she attributed to a tickling sensation in the nasal mucous membrane, and she complained during the fits of vertigo and headach. On examining the nostrils, no

trace of inflammation or any foreign body could be discovered. A detailed account follows of the various measures which were adopted from this date to the 21st of March. These were fomentations and baths; then purgatives and foot-baths; next low diet; anthelmintics; sulphate of quinine in large doses; emetics; antispasmodics; and homœopathic doses of *nux vomica*; but no relief was obtained: at last, Dr. Bauwens prescribed snuff. Three pinches, given at a few hours' interval, produced at the time violent sneezing and some mucous discharge from the nostrils, but entirely cured the patient.

*Bulletin Médical Belge. No. 1. Janvier, 1836.*

#### *The Magnet, a Remedy for Gout.*

OWING to a considerable commercial demand for loadstone, the conductors of the *Bulletino delle Scienze Mediche* of Bologna were led to make enquiries concerning the uses to which it was put; from which it appears that the Ex-Bey of Algiers, whilst at Leghorn, in 1831, mentioned to a Catholic dignitary, (Father Campagnoli,) who was suffering from the gout, that the application of the loadstone was an oriental remedy for that disease, and of certain efficacy. The patient immediately procured a piece of loadstone, as he had been subject to regular and frequent attacks of gout since 1805, and the application removed the next paroxysm. Since this time he has always recurred to the same remedy, and he finds that the attacks came on less frequently and severely, and that they invariably yield, so that he has rejected all his former plans of treatment. On the first symptom he goes to bed, and places the loadstone in close contact with the painful part; he presently falls asleep, and awakes free from pain and able to walk. The loadstone he uses weighs five pounds and has smooth sides. He has recommended to other gouty persons the same remedy, and they have experienced similar relief.—*Bullettino delle Scienze Mediche. Bologna. Marzo et Aprile, 1835.*

#### *On the Relations between the State of the Pulse, Respiration, and Temperature of the Body, in Diseases.* By Dr. AL. DONNÉ.

[THE want of accurate information on these points led Dr. Donn  to direct his attention to them, whilst acting as "Interne" at the hospitals of la Piti  and la Charit ; and, as he has no longer the same opportunities of pursuing his investigations, he has arranged the facts he has collected in tables. Although the inferences he draws from them are but few, and the data not sufficiently extensive, he hopes that he may be the means of directing the attention of others to the same subject. The temperature was taken by a small thermometer placed in the armpit, and kept there for five or ten minutes. To have placed it in the mouth or anus would have been impracticable, and, on a comparative trial of the heat of the mouth and armpit, no marked difference was detected.]

	Pulse.		Respiration.		Temperature.*
Hypertrophy of the heart. . . .	150	..	34	..	103
Puerperal fever (Metritis) ..	168	..	48	..	104
Phthisis .....	140	..	62	..	102
Typhoid fever .....	136	..	50	..	104
Jaundice .....	36	..	37	..	96.40
Hypertrophy of the heart. . . .	..	..	..	..	94.40
Diabetes .....	..	..	..	..	96.40
Lumbago .....	..	..	16	..	..

The preceding cases are those in which the temperature observed was the highest and lowest, and the respiration and pulse most frequent and slowest. It will be observed that, in some of the cases, the temperature was in relation to the rapidity of the pulse and the respiration; but the relations of these three conditions to each other are far from being exact.

\* Fahrenheit's scale is used throughout this paper.

*Pulmonary Tubercles.*

<i>Women.</i>			<i>Pulse.</i>			<i>Temperature.</i>		
	<i>Pulse.</i>	<i>Temperature.</i>						
First case....	120	102.10	Fifth case ..	128	101.75			
	128	99.50		120	101.75			
	120	102.10		112	100.85			
	112	100.20		100	100.20			
	136	99.50		84	98.30			
	126	99.20	Sixth case ..	68	96			
	130	100.20		92	103			
	140	102.10		74	98.30			
Second case..	82	99.50						
	76	99.50						
	84	98.30						
Third case ..	88	102.10						
	96	100.20						
	76	101.30						
	106	101.30						
	98	100.20						
Fourth case..	98	99.50						
	100	101.30						
	104	100.20						
	110	102.10						

In some of these cases there is a correspondence between the state of the pulse and temperature. There is not, indeed, an exact correspondence between the number of pulsations and the degrees of the thermometer; but the heat of the body augments at the same time as the pulse quickens, and *vice versa*. This occurred in Cases 5, 6, 7, and 8; but, in Cases 1, 2, 3, 4, 9, and 10, there is no relation; for in some the temperature diminishes when the number of pulsations increases, and in others the heat increases whilst the pulse becomes slower.

*Pleurisy.*

<i>Men.</i>					
	Pulse.	Temperature.		Pulse.	Temperature.
First case....	106	99	Third case ..	88	98
	104	100.20		80	99
	106	100.20		94	98.30
Second case..	80	94.38	Fourth case..	100	101.30
	80	100		100	102.10

*Pneumonia.*

	Pulse.	Temperature.		Pulse.	Temperature.
First case....	102	101.30	Second case..	92	96.40
(Woman.)	90	99.50	(Man.)	126	103
	94	100.20			
	98	101.30			
	86	101.30			

*Hypertrophy of the Heart.*

Women.					
	Pulse.	Temperature.		Pulse.	Temperature.
First case....	61	97.75	Fourth case..	106	99.50
	68	98.30		108	102.10
Second case..	120	100		106	101.58
	120	101		108	99.72
Third case ..	64	98.30		104	99.50
	98	99.50		150	103.10

*Chlorosis.*

	Pulse.	Temperature.		Pulse.	Temperature.
First case. . .	92	100.2		100	98.30
	80	97.75		82	98.30
	74	96.40		96	99.72
	74	99	Third case ..	104	99.50
Second case..	72	99		102	100.20
	96	99	Fourth case..	108	100.20
	100	99.50		100	101.75

*Metro-peritonitis (Puerperal Fever.)*

	Pulse.	Temperature.		Pulse.	Temperature.
First case. . . .	152	102.10		157	103.55
	156	102.10		166	103.10
	168	104		152	102.10
	152	103			
	154	103.55	Second case..	96	99.50
	152	103.55		104	100

*Jaundice.*

	Pulse.	Temperature.		Pulse.	Temperature.
First case. . . .	36	98	Second case..	62	97.75
(Man.)	38	98.30	(Female)	52	96.40

*Hemiplegia.*

	Pulse.	Temperature.		Pulse.	Temperature.
	124	99.72		96	99.50

*Hysteria.*

	Pulse.	Temperature.		Pulse.	Temperature.
	76	99.19		94	98
	94	98		102	99.72

*Diabetes.*

	Pulse.	Temperature.		Pulse.	Temperature.
(Man.)	78	97.25		84	96.40
	78	97.25			

*Enteritis.*

	Pulse.	Temperature.
(Man.) Before bleeding . . . .	104	101.58
After bleeding. . . . .	76	100.20

*Rheumatism.*

	Pulse.	Temperature.		Pulse.	Temperature.
First case. . . .	86	98.30	Third case ..	76	98.30
(Man.)	82	98.30	(Man)	60	97.39
Second case..	96	101.75			
(Woman)	80	99.50			

*Inflammatory Fever.*

	Pulse.	Temperature.		Pulse.	Temperature.
First case. . . .	102	104	Second case..	72	97.75
	72	97.75		88	101.30
	60	96.40			

*Typhoid Fever.*

	Pulse.	Temperature.		Pulse.	Temperature.
First case. . . .	88	101.30	Second case..	102	101.30
(Man,)	90	102.10	(Woman.)	108	103.55
	84	101.30		136	104

From the foregoing observations it appears that a relation between the temperature and pulse existed more frequently than the contrary, especially in those diseases which did not interfere considerably with the functions of hæmatosis. Thus, in tubercular consumption, pleurisy, and chlorosis, there was a more frequent want of relation than there was relation; in organic diseases of the heart, and contraction of its orifices, the relation was by no means constant; in hemiplegia, enteritis, rheumatism, jaundice, inflammatory, intermittent, typhoid, and puerperal fever, the relation was more constant. The constancy in pneumonia was an exception to the other pulmonary diseases.

[Two tables of the state of the pulse and respiration, and of the respiration and temperature, conclude this paper. M. Donné avoids drawing any inferences from these, or attaching much importance to his other deductions, as his facts are not sufficiently numerous: as far however as they go, they are of importance; and, if M. Donné succeeds in inducing others to take similar pains, sufficient data may be eventually obtained to elucidate that very obscure subject, the production of heat.]

*Archives générales de Médecine, Octobre, 1835. Tome lx.*

*On the Presence of Worms in the Air-Passages. By L. ABOUSSOHN.*

[THIS cause of death has attracted but little attention. In 1822, when M. Aboussohn first met with the following case, he could only find one other recorded, which was by Haller, of a girl of ten years old, who died from suffocation produced by two lumbrici in the trachea. (*Opuscula Pathologica. Lausanne, 1768, p. 26, Obs. 10.*)]

CASE. B. R., a little girl of nine years old, and of good constitution, was seized, on 30th December, 1822, on going to school, with difficulty of breathing, which was attributed to the violence of the wind. The dyspnoea increased, and in the night she could not lie down, and often ground her teeth. To these symptoms were added, on the next day, copious perspirations, from constant and uncontrollable agitation; there was some vomiting. She swallowed with great difficulty a few spoonfuls of infusion of valerian, given by her medical attendant, who suspected hydrophobia, from her having been severely bitten by a dog forty-six days previously. She expected to die. On the morning of the third day she began to spit constantly, and referred all her distress to the anterior part of the chest. She drank at noon some sugared water, which she vomited with some relief: she afterwards requested food, which was also vomited. A general tremor of the whole limbs came on, followed by convulsions, trismus, and death at half an hour after one o'clock, in the midst of the most dreadful sufferings. The body was examined most carefully forty-eight hours after death, without any thing being discovered unnatural, with the exception of thirty-seven ascarides lumbricoides; one of which, five inches in length, was found partly in the trachea and partly in the right bronchus, of which the mucous lining was injected and covered with reddish mucus. The stomach contained two worms, the duodenum eight, and the jejunum twenty-six.

In 1834, M. Blandin mentioned, in his *Traité d'Anatomie Topographique*, (p. 199.) that, whilst at the Children's Hospital, he had met with a case of a child strangled by a large ascaris lumbricoides, which had ascended from the stomach, and had found its way into the trachea and right bronchus. The following case occurred in the same hospital.

CASE. A little girl, æt. 9, having suffered for two days the precursory symptoms of measles, was attacked suddenly with extreme anxiety, great dyspnoea, acute pain in the throat, to which she often carried her hand, as if to remove the obstacle, unsuccessful efforts to cough, threatening asphyxia: death, two hours after admission. On examination twenty-four hours after death, a worm, six inches long, was found alive in the pharynx, into which it had probably crawled from the larynx after the death of the patient. No other diseased appearances were discoverable, except some redness of the mucous coat of the stomach, and twenty lumbrici in the intestines. Although the mucous lining of the larynx and trachea was quite pale, and the worm was not found there, yet the sudden symp-

toms unexplained by any organic change, and the proximity of the worm, render it highly probable that its presence in the larynx was the cause of death. (*Bulletin général de Thérapeutique*, tom. viii. p. 32.)

The following case was more favorable. A young lady, æt. 8, whilst in good health, was suddenly seized, without any known cause, with cough, which in a few instants became very violent, with symptoms of suffocation. This state lasted two hours, and she became convulsed, when in her efforts she threw up a living worm (*Acaris L.*), and the cough and other symptoms ceased.

CASE. G. Sweig, æt. 52, a labourer, habitually asthmatic, but otherwise in good health, was, after much anxiety and exhaustion in nursing his sick and poor family, seized with febrile symptoms, attended with dyspnœa and great prostration of strength. On the fifth day of the disease the dyspnœa increased, with so much agitation that the patient required several persons to keep him in bed. On the sixth day this continued, with threatening suffocation, whistling respiration, deglutition difficult; he could not speak, but by signs referred the seat of his suffering to the upper part of the sternum. He died suddenly in the afternoon.

*Examination, forty-two hours after death.* Abdominal and thoracic viscera were sound, but a lumbricus was found lying across the bifurcation of the trachea, mucous membrane injected, and in one part a superficial erosion. Probably this worm passed into the trachea on the fifth day of the disease, when the habitual dyspnœa became so unusually augmented.

Of these six cases, there were five in which the accident happened to children between eight and nine years old, four of whom were girls: the sixth case, however, proved that it may happen in advanced years, when circumstances are present which are favorable to the development of worms. The symptoms differ according to the situation of the worm: when it was in the larynx, the violent paroxysms of cough threatened suffocation; when in the trachea, the cough was less intense, there was rather dyspnœa with paroxysms of orthopnœa, and great agitation, vomiting, and incontinence of urine; death was preceded by convulsions in one case, and in the last was sudden, as if the lung, fatigued by the struggle, was deprived of all nervous influence. The impression of the patient, that a fixed and local obstacle prevents his respiration, is a valuable diagnostic sign. The means to be employed would be, 1, immediately to pass the finger into the throat, to examine if a worm can be felt, and to remove it. 2. Vomiting should be excited. 3. As a last resource, tracheotomy should be performed.

[We would suggest that, in those cases where the worm passes into the trachea, considerable light might be thrown on the diagnosis by the stethoscope. From the anatomical disposition of the right bifurcation of the trachea, foreign bodies pass into it more readily than into the left: in two of the above cases this happened; and of the other two, one is deficient in detail on this point, and in the other the worm is said to have lain across the bifurcation. Diminution or abolition of the respiratory murmur, particularly in the right lung, with absence of any physical signs of disease adequate to the explanation of the dyspnœa, when viewed in connexion with the history of the case and the symptoms, would render the diagnosis more certain. Indeed, the patient's life depends on the accuracy of the diagnosis, as probably tracheotomy alone would enable the worm to be expelled.]

*Archives générales de Médecine, Janvier, 1836.*

#### *Salutary Effects of Smallpox.* By L. POLLETTI, M.D.

THIS case is related by Professor Lionello Polletti, of Ferrara. A girl had for a considerable time complete loss of sense and motion of the right leg, with permanent contraction of the right arm, which had been succeeded by what has been called paralysis agitans; all the usual remedies had been tried, but without success, so that she refused to submit to more, when she was seized (although previously vaccinated,) with confluent smallpox. She recovered, however, from the attack, which was very severe and alarming in all its stages, and at the same time lost the paralysis of the arm, and regained the motion and sensation of her leg.—*Bullettino delle Scienze Mediche. Bologna. febbrajo, 1835.*

*Report on Vaccination in France during 1833. By M. GERARDIN.  
(Experiments on the Nature and Reproduction of the Vaccine Virus.)*

THE numerous cases of modified small-pox which occurred in 1825 in France, in individuals regularly vaccinated, led to the supposition that vaccine matter had degenerated by successive transmissions for a long period. M. Fiard, by a long course of careful experiments, endeavoured to settle this point by ascertaining whether or not vaccine virus could now be transmitted from man to cows, and again from cows to man, as it could be at the commencement of this century when it was first introduced into France, as is proved by a report on the state of vaccination, made at that time. If this was not now possible the inference was legitimate that a change in the nature of the virus had taken place. In 1824 and 1825 M. Fiard introduced vaccine matter into seventy cows of different kinds; in only seven animals were pustules produced; the eruption was less developed than in the most feeble vaccinations, and the matter from the eruption introduced into children produced no effect. In 1828 M. Fiard received from England four glasses charged with vaccine matter taken from cows: with this he immediately vaccinated a young cow and the regular eruption followed. He then vaccinated eight children, and in two only was it unsuccessful, one of these having been vaccinated several times with ordinary matter. The eruption differed from common cowpox in the greater severity of both local and general symptoms. Altogether he vaccinated twenty-four children successfully from this same cow. The cow-pox of the inoculated cows was not attended as in the natural disease, as described in this country, by fever, loss of appetite, depression, and diminished secretion of milk. Eventually, from the difficulties attending the transmission of the virus, M. Fiard lost his cow-pox matter. His next endeavours were to ascertain if cow-pox existed among cows in France. He was then living in the department of Ain, and he was assured by the country people that such a disease was common among cows, rendering milking difficult, and that the women who milked the diseased animals always washed their hands in order that they should not communicate the infection to healthy cows. A cow was soon brought to him with several pustules like those of cow-pox on the teats. He inoculated five children with matter taken from these pustules without effect. Twelve days afterwards, on examining the same cow, he found new pustules springing up as the old ones dried up. These circumstances made him doubt the nature of the eruption. Similar experiments were repeated in this district many times in three successive years. In 1827 he repeated them near Paris, and at La Chapelle in 1828, with the same want of success; and he concluded that "it was impossible to procure the cow-pox in France." The information he received from other parts of England confirms a statement of Dr. Baron to M. Valentin as to the rareness of cow-pox in Gloucestershire: during fifteen years it has only appeared at Berkley in 1818, 1819.

[M. Fiard is by no means justified in inferring from his own researches that cow-pox matter cannot be procured in France. His search was continued only a few years, and in two or three districts. As it appeared in Berkley, a village in England, only twice in fifteen years, M. Fiard's experiments are certainly too few to admit his sweeping conclusion.\*]

M. Fiard instituted the following experiments in order to determine whether (as Jenner thought) vaccine matter came from the disease of horses called, in France, *water in the legs*, in England, *grease*; or whether cow-pox is small-pox communicated to cows; or, finally, if cow-pox is natural to the cow.

*Experiment 1.* In January 1832 M. Fiard inoculated four cows from the matter obtained from the legs of a diseased horse; no pustules were produced.

*Experiment 2.* In January 1833 he inoculated seven cows on their teats with small-pox matter from a confluent case, without even producing inflammation of the punctures.

\* This criticism is amply justified by a notice, which appeared since it was written, in a French journal, (*Gazette Méd.* 2 Avril, 1836,) acquainting us with the fact that the real cowpox had been discovered at Passy.—Rev.



**Experiment 3.** In September 1833 he inoculated seven other cows with confluent small-pox matter without effect.

About this period the following experiments were made at the veterinary school at Alfort, to determine the value of the statements of Dr. Sunderland. Their object was to ascertain if small-pox could be communicated to cows by exposing them to the contact of the body and bed linen of those who had suffered from the disease. After having ascertained that there were no pustules of cow-pox on three cows, two of the animals were covered by a sheet and counterpane, and a third with a sheet, which had been used by small-pox patients at the Hôtel Dieu, and on which were observed stains made by the dried virus. These were fixed by belts to their bodies and remained on ten days and ten nights. During this time and twenty days afterwards the cows were seen every morning, but no trace of the disease was detected. Other pieces of linen were applied for seventeen days, and the teats rubbed with a shirt impregnated with virus, but no symptoms appeared though the cows were watched for the next month. In order to ascertain if the linen actually possessed contagious properties, the bodies of a dog and of a pig were each surrounded with one of the impregnated napkins which had not been used in the previous experiment; as each of these animals are known to contract the disease. The dog released himself from the napkin in twenty-four hours; the pig in ten minutes; and it was torn in pieces by other pigs with him. The two animals were examined every day for a month, and nothing appeared. Twenty-three days after the experiment a pig was observed to have a crop of pustules, like the natural small-pox in these animals, on the skin of his testicles, belly, and thighs; and eight days afterwards other pigs had a similar eruption, which ran through its regular stages. From these experiments at Alfort it appears, 1. That the small-pox could not be communicated to three cows by simple contact. 2. That it is probable the three pigs which destroyed with their teeth the napkin stained with virus, contracted the small-pox from the human subject. At the same time similar experiments were made at Rambouillet by Dr. Brunelle on cows and on four sheep: these are detailed, but the plan adopted was much the same as at Alfort, though more care was taken in procuring fresh small-pox virus. The animals contracted no disease.

Two individuals died of small-pox in a sort of cellar badly aired, and communicating with another cellar in which two cows were kept which were obliged to pass through the place where the sick persons lay. Although the clothes, &c. of the deceased persons remained more than fifteen days in the cows' stable, the animals were unaffected. A man lay ill of the small-pox in a stable with three cows who were not affected. Two setons steeped in the pus of small-pox were inserted into a young cow without inoculating her with the disease.

[Notwithstanding these results, the Academy does not regard the question as settled, but recommends it to further attention. The method by which cow-pox could be reproduced at will, would probably open a new field for research: and complete the benefits of Jenner's discovery.]

*La Lancette Française.* 2 and 5 Mai, 1835.

#### *On Carburet of Sulphur in Rheumatism.* By Professor OTTO, of Copenhagen.

**CASE 1.** A young man had been affected for six months with obstinate rheumatism of the lower limbs, the swelling of the knees and feet preventing all motion. The general health was not disturbed. The usual remedies, together with vapour-baths, had failed, when he consulted Dr. Otto, who directed him to continue the baths, and prescribed two drachms of carburet of sulphur in half an ounce of rectified spirit of wine, four drops of which to be taken every two hours; the lower limbs to be rubbed with a liniment consisting of two drachms of carburet of sulphur and half an ounce of olive-oil. The amendment was remarkably rapid: in less than four days the pain had so much diminished that he could rest his feet upon the ground, and five weeks afterwards the swelling, pain, and all the morbid symptoms had disappeared.

**CASE 2.** A sea captain, æt. 40, was attacked, after exposure to cold, with acute sciatica of the left thigh, preventing him from walking. The usual remedies were

employed for a fortnight without success, when he saw Dr. Otto. The carburet of sulphur, internally and externally, was of immediate benefit. The pain diminished considerably in less than two days, and in eight days the patient was quite well.

CASE 3. A brazier, set. 34, was attacked with acute rheumatic fever and sciatica of the left thigh, preventing motion. After the febrile symptoms ceased, the sciatica became chronic, which Dr. Otto treated with blisters, frictions, vinum antim., and tinct. guaiaci, but without benefit. On the fifth day he prescribed the carburet of sulphur internally and externally. In two days the pain diminished considerably; in four days he could move the limb with ease and walk tolerably; in ten days he was well.

CASE 4. This was an obstinate case of chronic rheumatism, in which the carburet was employed in connexion with calomel, guaiacum, &c., so that its effects could not be so distinctly traced.

*Bibliothek for Læger, 1835.*

## SURGERY.

### *On the Treatment of Inflammation of the Testicle by means of Compression.*

By J. C. F. FRICKE, Surgeon to the General Hospital in Hamburg.

[In presenting to our readers the following important document relative to a new mode of treating Hernia humoralis, or swelled testicle, we shall for the most part make use of the author's own words, merely omitting phrases and brief paragraphs, here and there, which do not seem essential. It may be well to inform the reader, that Dr. Fricke is a surgeon of great reputation and of most extensive experience, and the author of some surgical works of much practical value.]

I had long meditated (says Dr. Fricke,) on the discovery of some means to obviate the tediousness and other numerous inconveniences attending the common mode of treating inflammatory affections of the testicle, by leeches, poultices, &c.; and at length it occurred to me that *compression*, which I had found so very serviceable in some analogous cases, offered the fairest prospect of a favorable result. The event completely answered my expectations; and I had soon the pleasure to perceive how, by means of this, the disease could be removed, in a simple, easy, and surprisingly rapid way.

Generally speaking, compression may be employed in every kind of inflammatory enlargement of the testicle, and from whatever cause produced. We have found it equally useful in cases arising from gonorrhœa, whether springing from sympathy in the inflammatory stage, or originating in what is called suppressed claps, and in such as have arisen from external injuries. The degree or period of the inflammation makes no difference.

The only contra-indication to the employment of this treatment, worthy of consideration, has been found in an affection of the general system. For instance, if the local inflammation had arisen from errors in diet, such as abuse of spirituous liquors, or if, contemporaneously with it, considerable disorder of the gastric system had shown itself, it was found necessary to remove this state before recourse was had to compression; as, otherwise, the usual result was not obtained, and the employment of compression was obliged to be postponed for a period.

In many cases the compression at first increased, in some degree, the pain of the inflamed testicle; in some cases (particularly when applied too forcibly,) it produced great pain; but this never continued long: the patient, after a short time, often in a quarter of an hour, and even in cases where the pain had been extremely severe, finding himself so completely relieved as to be able to leave his bed and to walk about in his room.

In inflammatory swellings of quite recent origin, a single application of the compression was found sufficient, in many cases, to remove the disease. When it was of longer duration, (say, from three to eight days,) it was found necessary to repeat the compression two or three times. Swelling of the spermatic cord, if it was not very considerable, did not at all contra-indicate compression;

nor yet did other contemporaneous local affections, such as buboes, ulcers, &c. When a general febrile state was produced by the orchitis, compression was found the best means speedily to remove it, at least where the vascular reaction was not too great; although, in extremely rare cases, this was produced by the compression itself.

The unpleasant part of the treatment by compression was, as I have said, its occasioning pain in some cases. This result was observed chiefly in the early period of my practice, and I considered it as owing to our making the compression too strong. In my latter practice, on avoiding this, we heard no more of pain being produced by it. In some cases, in which the affection had been previously treated by cataplasms, &c., and where we had only made one application of the compression, there still remained for some time a slight painful swelling of the testicle; but it gradually disappeared.

In several cases I had occasion to observe, as the consequence of compression, nausea, inclination to vomit, and bitter taste in the mouth, coming on without any other evident mark of gastric disorder. When this was the case, compression evidently was of no avail; the pain remitted little or not at all, and the swelling did not decrease. On removing the compression, giving an emetic, or applying a poultice to the stomach, the symptoms of disturbance soon disappeared. In the few instances in which this affection of the stomach was observed, the compression had been for the most part too strong; in two of them, however, it seemed to depend on previous disease in the abdomen. It is however to be observed, that the cases in which this sympathy exists in such a degree as to give occasion to gastric disorder are, generally speaking, so rare as not to be regarded as any drawback on the superiority of this mode of treatment. It is necessary, however, in all cases where such a disposition shows itself, immediately to put an end to the compression.

The good effects of the compression show themselves very soon after its application, and the speedy abatement of the pain is always the surest sign of its efficacy. If the pain continues some hours in any considerable degree, a general disorder of the system may be looked to as explaining the failure of the treatment.

I will now give a comparative statement of the results of the treatment of orchitis by leeches, cataplasms, &c., and of that by compression, taken from the journals of the General Hospital, since the commencement of the practice in 1832. In all, we have compared seventy-four cases: of this number, fifty-one may be regarded as acute cases, or cases in which the symptoms of inflammation were strongly marked, and twenty-three as chronic cases, or cases in which the inflammatory symptoms had more or less remitted. Of the first division (of fifty-one), eighteen were treated with leeches, cataplasms, &c., and thirty-three by compression;—of the second division (of twenty-three), nine were treated with poultices, leeches, &c., and fourteen by compression. The following are the results of the two different kinds of treatment, as regards the time occupied during the case:—Of the thirty-three cases of acute orchitis treated by compression, the average period of treatment was nine days;—of the eighteen acute cases treated without compression, the average was thirteen days;—of the fourteen chronic cases where compression was employed, the average period of treatment was twelve days;—of the nine cases submitted to other treatment, the average was fourteen days. Such were the average results; some of the comparative results of the two kinds of treatment, in reference to individual cases, were as follows:—Of the thirty-three acute cases treated by compression, five were cured in three days; five, in five or six days; six, in seven days;—of the eighteen acute cases treated by other means, one case was cured in three days; one, in five days; two, in from seven to eight days, seven, in from eight to eleven days. In regard to the chronic cases, out of the fourteen treated by compression, one was cured in two days, and the greater number in ten or twelve days; while, of the nine cases in which cataplasms, leeches, &c. were used, the cure took place in no case in less than eight days.

Latterly, when experience had enabled me to treat the disease with more circumspection, the results of compression was much more favorable. In the present summer (1835,) I treated in this way seventeen cases, which are not included in

the above statement. Of these were cured in one day, one; in two days, four; in three days, four; in four days, two; in five days, three; in nine days, one; and two in ten days. The three last were severe and unfavorable cases. In nearly two thirds of the whole of the above-mentioned cases, no hardness or swelling of the testicle remained behind.

I will now describe the manner in which I apply compression. At first I attempted to compress the testicle against the thigh and pelvis, by passing over it long and wide strips of sticking plaster, from the nates up to the abdomen. I was soon forced to give up this plan, as well because the compression produced by it was neither secure nor equal, and the patient was forced to keep himself in bed, and, even while there, to avoid all considerable movements. After many other unsuccessful attempts by means of temporary bandages, &c., I at length adopted the following, which is proved by experience to be the best.

For the purpose of compression, I employ strips of sticking plaster; the plaster being made very adhesive, but not of too irritating materials,\* and spread on linen the breadth of the thumb. No preparatory measures are required; no leeches, cataplasms, &c.

In slighter cases the patient may stand before the surgeon, leaning against the wall, or he may rest on the edge of the bed or sofa, in such wise that the scrotum may hang freely down. If the scrotum and neighbouring parts are much covered with hair, this must be removed; but, generally speaking, this is unnecessary.

The surgeon takes the scrotum in one hand, and separates the diseased from the sound testicle, while with the other hand he gently stretches the skin of the scrotum over the former; the spermatic cord is isolated in the same manner. If the testicle is much swollen, it must be held by an assistant; otherwise, it suffices for the patient himself to keep the sound testicle somewhat separate from the diseased. The surgeon now applies the first strip of plaster over the isolated spermatic cord, about a finger's breadth above the testicle, holding the end of the strip with his thumb, and passing it round the cord. He proceeds in the same way with the second strip, which must either in part or altogether cover the former. The first part of the process must be carefully done; the strips must compress the cord closely, (and for this purpose it must be kept approximated to the skin, which is to be tightly stretched over it;) otherwise, when the other extremity of the testicle is compressed, the upper end will be apt to slip upwards through the loose rings of sticking plaster; a circumstance not only occasioning pain, but rendering the whole operation abortive. In this manner we proceed, laying strip after strip, the last always lying over the former by a third of its width, until we have reached the thickest part of the testicle, and where it begins rapidly to decrease in diameter. The surgeon now changes his mode of proceeding, and, laying hold of the testicle already covered, passes his strips from above downwards over the lower portion of the testicle, and up over the back part. In this way the whole remaining portion of the testicle is closely enveloped and compressed. I have already said that the compression must not be too great; and in most cases the surgeon will be able to judge as to the proper degree by the speedy disappearance of all the pain which had previously existed.

If both testicles are affected, we proceed to envelope one in the manner now described: when this is done, it will be found that there is not room left for applying the circular strips in the same manner to the other; we are therefore under

\* The following composition, contained in our Codex, is the plaster which I have employed for some years, and has been found preferable to all others:

R. Emplastri Lithargyri, partes sex;  
Colophonii pulverati (Picis nigræ,) partem unam. Scorum liquata commisceantur.

The Emplastrum Lithargyri employed is made as follows:

R. Lithargyri subtilissime lævigati, lib. v.  
Olei Oliv. lib. ix. M. Coque igne moderato, spatula lignea semper agitando et pauxillum aquæ subinde instillando, donec Lithargyrum perfecte solutum sit, &c.

the necessity of including both testicles in the circular strapping, the testicle already covered serving as a point of support for the other. Over the lower portion of this second testicle the strips are passed, as in the former case, from behind backwards.

In some cases where the skin is irritable, ulcerations take place: in this case small slits must be cut in the plaster, and a goulard lotion applied, which soon heals them.

Generally speaking, the patients can leave the bed immediately after the strapping, and walk about the room; and, in cases where the inflammation is not very great, or has been taken early, they may even go out and work a little.

The renewal of the straps must depend on the decrease of the swelling and other symptoms. In many cases one application suffices; otherwise, we remove the plasters when they have become so loose as to admit the introduction of the scissors between them and the skin.

Any other treatment the patient may require must depend on the complications of the disease: the orchitis, as such, needs nothing besides the compression.

In those inflammations of the testicle which originate from blows or pressure, &c. compression has proved the best treatment. Here, if the inflammation ran very high, I have usually applied leeches in the first instance, and kept on poultices for one or two days; but in slighter cases I had recourse immediately to compression.

The following are the principal advantages which the treatment of orchitis by compression possesses over other methods:

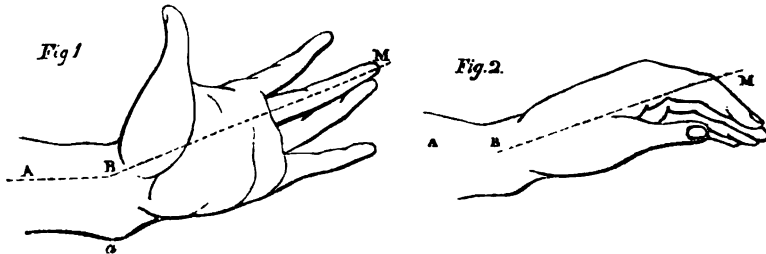
1. The speedy removal of pain.
2. The quick removal of the disease itself.
3. The simplicity of the method, and the slight trouble thereby given to the patient.
4. The small expense of the treatment.
5. The comparatively slight care and attendance required on the part of the surgeon.—The two last points are of considerable importance in hospital practice.

*Zeitschrift für die gesammte Medicin.* B. i. h. i. 1836. *Hamburg.*

#### *On Fractures of the Inferior Extremity of the Radius.*

By G. GOYRAUD, M.D., of Aix.

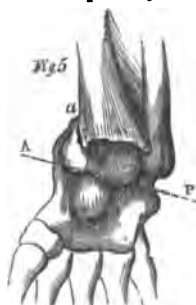
A FREQUENT consequence of a fall on the hand is a painful swelling of the wrist, hand, and lower extremity of the forearm. This tumefaction is accompanied by a deformity consisting in an unnatural projection of the lower extremity of the ulna; a change of form in the forearm, which is rounded inferiorly; inclination of the wrist outwards and generally backwards, and of the hand in the contrary direction. Generally the only treatment consists in emollient applications. The swelling slowly declines, and the motions are not free for a long period. Six months after the fall, the wrist-joint has not recovered its suppleness. As the swelling disappears, the projection of the lower end of the ulna is more apparent: inequalities are felt on the palmar surface of the inferior extremity of the radius. Eventually the joints regain their mobility, but the deformity remains throughout life. (Figs. 1 and 2.)



This accident has been considered by some to be a diastasis of the inferior radio-

ulnar articulation, by others as a sprain; by Petit and Boyer as a dislocation of the wrist: but no external violence could separate from each other the lower ends of the radius and ulna; no sprain could change the direction of the hand; and, if the possibility of luxations of the wrist are admitted, (which Dupuytren doubts,) still they must be very rare, whilst this accident is very common. It can only be accounted for by a fracture of the radius.

Fractures of the carpal extremities of the radius are generally oblique from above downwards, and from the dorsal to the palmar surface. (Fig. 3, line *F R*.) Out of forty-seven instances of fractured radius, forty-three were in this direction; two others were oblique fractures from above downwards, and from the palmar to the dorsal surface; in one other the inferior fragment was fractured vertically, and in another there was a star-like fracture into many pieces. In the most common variety, the obliquity was of various degrees, sometimes nearly transverse. (Fig. 4, line *F R*.) In the common oblique fracture the inferior fragment is forced, by the violence of the blow, and the action of the muscles passing from the forearm to the hand, from below upwards and from before backwards. (Fig. 3.) The superior fragment is drawn towards the interosseous space by the action of the



two pronator muscles. (Fig. 5.) The consequence of this displacement is a diminution of the breadth of the inferior part of the forearm and interosseous space, (fig. 5;) a depression on the external side of the radius, some lines above the wrist, (fig. 5, *a*;) an inclination of the carpal articular surface of the radius outwards (fig. 5, line *A P*;) and backwards (fig. 3, line *A P*.) Cline and Cooper have attributed the prominence formed anteriorly above the wrist to the displacement of the inferior extremity of the *upper* fragment by the pronator quadratus; but M. Goyraud is convinced, from numerous dissections, that the *inferior* fragment is displaced, producing the prominence. The more oblique the fracture, the greater the displacement: in transverse fractures the violence only causes the displacement, and this may be so great as to simulate luxation of the wrist, (fig. 4;) an error which may be strengthened by the fact, that, after reduction, there is no tendency in the parts to become again displaced. The carpus follows the direction of the articular surface of the radius, so that the articulation of the wrist takes a direction separating it from the inferior extremity of the ulna, which consequently forms a projection remarked by Petit and Boyer, who believed it to be a consequence of luxation of the wrist. The hand would follow the same direction, if it were not for the internal lateral ligament of the joint, which prevents the hand turning outward; the flexor muscles, rendered tense by the wrist being thrown backwards in the common oblique fracture from behind forward, draw the hand forwards; in the fracture in the opposite direction, the extensor muscles draw the hand backwards. In the great majority of cases, the hand is fixed in the state of adduction and a little inclined forwards; sometimes, but rarely, backwards. If the violence has ruptured the lateral ligaments, or separated the styloid process of the ulna, the hand and wrist are in a state of adduction. (Fig. 1.)

These oblique fractures of the radius are extremely frequent: they generally are caused by falls on the palm of the hand, but sometimes on the dorsal surface, the hand being strongly bent forwards. The indications of this fracture are—an unnatural projection of the lower end of the ulna, a depression on the radial border of the forearm some lines above the wrist-joint, a little increase in the dorso-palmar diameter, and a little diminution in the radio-ulnar diameter of the forearm, at a point corresponding to the depression on the radial edge; pain in the lower extremity of the *radius*, augmented by pressure at this point, but not by the motions of the joint; pain also beneath the lower end of the ulna, from the dragging or rupture of the internal lateral ligament. In the commonest oblique fracture from above downwards and behind forwards, the wrist is inclined backwards, its axis forming an angle, more or less marked, with the forearm. (Fig. 2, lines A B and B M.) From thence a depression on the dorsal face of the forearm, over the radius, and ten or twelve lines above the wrist, and a large prominence, convex from above downwards, on its palmar surface. (Fig. 2, a.) The hand is bent forwards; and this inclination is more considerable in proportion to the deviation of the wrist. In the rare fracture from above downwards and before backwards, the wrist is bent forwards and the hand backwards. The inequalities are felt before the swelling begins, and when it is partly dissipated. Transverse fractures with great violence, and separation of the epiphyses, may be mistaken for dislocations; but, as Dessault remarked, in luxations the styloid process of the radius loses its relation to the carpus; in the other two accidents it is no longer in the same line as the radius, but it preserves its relations with the hand. Crepitation is often absent, from the want of mobility in the fragments and from the swelling. To sum up: the diagnosis is formed on the change in the direction of the axis of the wrist and that of the hand; the swelling characteristic of fractures; the pain seated not in the joint, but in the lower end of the radius, and the unusual projection of the lower end of the ulna. The absence of rotation in the end of the radius during pronation and supination has been dwelt on; but, from the large surfaces of the fracture and intimate connexion of the two bones, must not the motion of one be necessarily communicated to the other? This fracture is without danger: it leaves behind a deformity previously described, but M. G. has never known it produce obliteration of the interosseous space, nor loss of the motions of pronation and supination, which Dupuytren describes as a consequence of its being overlooked. Under such circumstances, the joint remains for a long time almost without motion.

*Treatment.* To reduce the fracture, the forearm must be bent and placed in a position between pronation and supination; an assistant produces counter-extension by seizing the lower part of the forearm, whilst another extends the limb by drawing the hand gradually outwards, and slightly inclining it towards the ulnar border of the forearm. The surgeon pushes the flesh of the two sides of the forearm into the interosseous space, and then puts the broken surfaces into apposition. The fracture is easily reduced, but retained with difficulty in its situation. The apparatus employed by M. Goyraud consists of two splints, about the breadth of the lower end of the forearm, one of which is from eighteen to twenty lines shorter than the other, and its inferior extremity cut off obliquely; two graduated interosseous compresses; and two pads, one between three and four inches long, and the same thickness as the middle of the graduated compress; the other an inch in length, and like a wedge, its base being about as thick as the anterior interosseous compress. The interosseous compresses are applied on the two faces of the forearm, parallel to the interosseous space, and descending to an inch above the joint; below this point they are replaced by the pads, the larger one over the dorsal aspect of the wrist, and the wedge-like pad on the palmar side, with its base next to the graduated compress, and its apex to the carpus. The longer splint, applied over the dorsal graduated compress and pad, is to descend to the posterior surface of the metacarpus; the shorter splint is placed over the palmar compresses and pad, its oblique extremity being inferior, and the acute angle of this extremity towards the radial edge of the limb, so that it is applied with the interposition of the cuneiform pad against the superior part of the prominence formed by the os pisiforme and os scaphoides. A tight roller confines the whole. The advantages of this method

are the following:—As the interosseous space terminates an inch above the wrist-joint, the long graduated compresses generally used to prevent the bones coming in contact are of no use; but, by substituting pads whose surface corresponds (as these do) to the shape of the lower end of the radius, this bone is efficiently acted upon. The effect of the oblique extremity of the splint is to change the direction of the line formed by the prominence of the os pisiforme and scaphoid process, which is almost horizontal, into an oblique line running from above downwards and from the ulnar to the radial border of the limb; that is to say, to fix the hand in the state of adduction, and to oppose more certainly the reproduction of the displacement; an indication which Cline and Sir A. Cooper attempted by the weight of the hand, which they allowed to hang out of the sling. During the last two years, this treatment has been adopted by M. Goyraud in eleven cases with complete success.

[This active-minded and intelligent provincial surgeon temperately complains of his views of the nature of this frequent accident (which were first published in 1832,) being copied almost verbatim into the "*Leçons Orales*" of M. Dupuytren, as the original production of that eminent man. We should be unwilling to believe that Dupuytren, who in a clinical lecture might have thought it unnecessary to mention authorities, was a party to this printed plagiarism: indeed, the gross flattery of him by his reporters in almost every page renders it probable that the late Baron never revised the lectures.]

We observe, in a subsequent number of the same Journal, a note of a *Reclamation* by Dr. Brière de Boismont, in which he asserts that Dupuytren's opinions respecting fractures of the radius were published in certain theses so far back as 1822,—viz. ten years before the publication of Goyraud. We are not able to decide on their respective claims.]

*Journal Hebdomadaire des Sciences Médicales*, No. 6, Février 6, 1836.

#### *Surgical Observations.* By Professor CHÉLIUS, of Heidelberg.

[In the first number of a new series of the *Heidelberger Klinische Annalen*, recently published under the name of *Medicinische Annalen*, this eminent surgeon has given an elaborate and highly interesting Report of his Surgical and Ophthalmological Clinical Practice in the Heidelberg Hospital, from 1830 to 1834 inclusive. We regret that our limits will only permit us to give a brief notice of some of the more important surgical observations contained in it.]

1. *Amputation.* Professor C. mentions that, out of twenty-nine cases of amputation, he lost only two patients. The circular incision was in every instance put in practice, and ligatures employed to secure the bleeding vessels; in no case torsion. Two alone required the removal of the dressings for after-hemorrhage; in all the rest they were allowed to remain untouched as long as possible; in some till the third week, at which period the wound was found perfectly closed.

2. *Lithotomy in the Female.* After discussing fully the merit of different plans that have been proposed, Professor C. adopts the method of incising perpendicularly downwards, (a modification of Bromfield's operation;) and for the following reasons: The urethra, throughout its whole extent, lies immediately upon the anterior wall of the vagina, as is likewise the case with the bladder. By the incision so directed these two points alone are implicated; the execution of the operation is simple, nor is it likely to give rise to any considerable loss of blood. The extraction of the stone will be attended with the least possible difficulty; and, should the large size of the stone demand it, the incision can be commodiously prolonged. Owing to the exact apposition of the vagina to the urethra and to the neck of the bladder, there exists a constant parallelism between the wound of the vagina, of the urethra, and of the cervix vesicæ; the urine finds a ready way of egress, and no danger need be apprehended from infiltration. From being able, in case of need, to carry the incision along the neck into the body of the bladder, every risk from pinching or tearing the cervix vesicæ is removed; lesions much more apt to produce subsequent incontinence of urine than the mere section of the neck.



As disadvantages resulting from this mode of operation, are enumerated the danger of vesico-vaginal fistula and permanent fissure of the urethra. The first of these objections must be opposed by the various arguments adduced in support of the vesico-vaginal section generally. In this respect the conditions here are much more favorable than in the instance of recto-vesical lithotomy; for here the vagina is empty, and the entrance of foreign matters into the cavity of the bladder, as feces from the wounded rectum, rendered impossible. Nor is any inconvenience to be apprehended from the remote chance of the influx of fluid during the flow of the catamenia. The second objection is supported neither by anatomical nor physiological grounds, and is directly refuted by Professor C.'s own proper experience.

*Operation.* The grooved staff is introduced with its handle sustained vertically by the assistant, and its concavity pressed up against the pubic arch: in this manner the parts to be incised are more securely fixed, the entrance of the vagina somewhat widened, and the finding the groove on the staff facilitated, and, lastly, the section downwards of the urethra and vagina accomplished without trouble. The incision may be performed with a probe-pointed bistoury introduced to the requisite depth along the groove, and then made to cut its way outwards, dividing in its course the neck of the bladder, urethra, and anterior wall of the vagina, to the full extent wanted: or it may be executed by means of the lithotome caché of Frère Côme. Should the incision of the bladder be too small, it must be enlarged by means of the probe-pointed bistoury, conducted along the left index-finger.

Reports of three cases are related wherein the above plan answered.

3. *Scrotal Calculus.* This case is remarkable from the multitude of concretions removed, amounting to twenty-seven in number. The patient was fifty-five years of age, and attributed the origin of the complaint to a fall upon the perineum, about twenty years previously.

4. *Bronchocele, (Struma Lymphatica.)* Professor C. is of opinion that, in every case of this disease where the nutritious vessels are much enlarged and easily to be felt, their obliteration by means of ligature is equally indicated, as in the aneurismal form of the affection; for, although the diminution of the swelling in Struma lymphatica, after the supply of blood has been checked by tying the superior thyroid arteries, does not proceed with such rapidity, nor to the same degree, as in the vascular goitre, still however such a decrease in the bulk of the tumour will be obtained, that the inconveniences it had created will be in a great measure lessened or altogether removed.

The operation is of the simplest description. The rule given is to make the incision correspond, in direction and situation, with the course in which the arterial pulsations are most distinctly perceptible to the finger of the operator. This will most frequently be found to be between the omo-hyoideus muscle and the point at which the vessel is entering the gland; often, however, between its origin and the same muscle. An advantage attending this method is, that, if it should not fulfil the desired end, diminution of the morbid growth, other means can, with greater confidence, be put in practice.—Four cases are reported in which it proved of great service, and in no one was it productive of the least bad consequence.

5. *Erectile Tumours.* Creosote was tried as a topical application in several cases of this affection, and especially Nævus maternus in infants. The only effect its continued application seemed to produce was the formation of a superficial dry crust, which came away, leaving the tumour in statu quo: indeed, in one case, the volume of the nævus appeared to have augmented under the use of the creosote. From its inefficacy, he was obliged to have recourse to caustic, which he pronounces unfailling in its effects, and preferable to the knife, from the danger of mortal hemorrhage from the latter.

6. *Removal of an Abdominal Tumour.* This is another addition to the sepulchretum of operations in that cavity. The tumour was of a fibrous texture, of considerable magnitude, attached by a pedicle to the uterus. The patient never recovered the shock of the operation, which she outlived seventeen hours. It is justice to state, that its performance took place at the earnest solicitation of the patient, in opposition to the advice and opinion of her medical men.

7. *Teleangiectasia Lipomatodes*. Under this strange name is detailed the history of a singular case of mixed tumour, partly erectile, partly lipomatous, occurring in the hand of a tailor, chiefly between the thumb and the metacarpal bone of the index-finger. As its presence interfered with the use of the needle, Professor C. determined to try the effect of tying the radial artery. Soon after the operation, so great was the amendment that he was again able to resume his handicraft. It is worthy of remark, that, in consequence of the supply of blood being diminished, it gradually lost its erectile character, assuming more and more that common to lipoma.

8. *Stricture of the Œsophagus*. For the permanent cure of stricture of the Œsophagus, Professor C., taking advantage of the principle introduced by Ducamp for strictures of the urethra, employs an oval ivory dilatator, attached upon a common Œsophagus bougie, about an inch and a half from its extremity. An ordinary Œsophagus bougie is first inserted, to ascertain the existence and situation of the stricture. Should this fail to make a passage, a thinner bougie must be used. Where the coarctation is considerable, it is sometimes necessary to use middling-sized urethra bougies. The bougie is left in ten or fifteen minutes each day, gradually exchanging it for one of larger caliber, until the dilatator is permitted to enter, which patients are found to endure quite as well as the ordinary sounds. Under this plan there is rapid improvement; and, after the lapse of a few days, a second thicker dilatator may be substituted for the former, until perfect dilatation is effected, and deglutition rendered free. For some time after the cure it is advised to introduce the instrument once every five, eight, or fourteen days, to prevent relapse. All instruments for the cure of stricture are always to be introduced by the mouth.

*Heidelberg Medicinische Annalen*, Band. i. H. i. 1835.

*On the Use of Belladonna as a Topical Application in Retention of Urine, Spasmodic Contractions of the Uterus, and in Strangulated Hernia.*

[THE well-known relaxant effects of belladonna on the iris, &c., has naturally led to its use in cases where spasm was known or assumed to exist in other parts. M. Guerin, of Bourdeaux, was the first, we believe, who employed it in spasmodic strictures of the urethra, in the form of ointment spread on a bougie; and he states that he found the same remedy, applied in the same manner, effectual in the case of strangulated hernia. Since then, belladonna has been frequently used topically in similar and analogous cases; and we shall here extract the heads of a few of the more recent which have met our eye in some of the foreign journals.]

I. *Efficacy of Extract of Belladonna in Retention of Urine*. By M. GERARD, late chief Surgeon of the Hospital at Avignon.

CASE I. A lady, æt. 36, was delivered of her first child, after a long and severe labour, at one A.M., on the 16th November, 1834. Nine hours thereafter it was discovered that the urinary bladder was immensely distended and painful, no water having been passed since the commencement of the labour, and there being still an incapacity to do so. No attempt seems to have been then made to introduce the catheter; the surgeon contenting himself with ordering "vegetable lemonade, and an emollient poultice to the hypogastrium." At nine P.M., no urine having been passed, (now three days,) matters were of course worse, and then the surgeon seems for the first time to have thought of the catheter, but he could not succeed in its introduction, owing to what he terms "a manifest coarctation of the urethra." Being deterred by the patient's debility from the use of general and local bleedings or the warm bath, M. Gerard prescribed an ointment composed of two drachms of Extract. Bellad. to one ounce of lard, and ordered it to be rubbed on the hypogastrium and labia. The first friction was made at midnight, the next at three A.M.; and shortly after this last the patient began to make water in small quantities, with much pain. The frictions were continued through the day, and the urine at length flowed plentifully.

CASE II. A man, æt. 49, was attacked with retention of urine, accompanied

with fever, for which he was copiously bled and leeches on two successive days, without relief. On the third day, frictions with the belladonna ointment were used on the hypogastrium and perineum. After the third friction there was a slight discharge of urine; and on the following day, the frictions being continued, the patient was completely relieved.

CASE III. A man, æt. 24, suffered very acute pains in the region of the bladder, attended with retention of urine for three days, the consequence of a severe blow. After the failure of general and local bleedings, and the warm bath continued for four hours, the belladonna ointment was had recourse to, and the urine flowed after the third application.

CASE IV. A man, affected with stricture of the urethra for six years, called in M. Girard in consequence of a suppression of urine, which had lasted four days, notwithstanding the employment of general and local bleeding, bathing, anodynes, &c. The belladonna ointment was ordered: after the first friction a slight flow of urine took place, and the relief was complete after the continuance of the friction for thirty-six hours. *Journ. des Connaissances Méd.-Chir., Mai, 1835.*

## II. *Employment of Belladonna in Spasmodic Contractions of the Uterus, Urethra, and Inguinal Ring.* By M. CARRÉ, chief Surgeon of the Military Hospital of Briçon.

CASE I. A lady was in labour of her third child; the waters had broke, and, as no progress was gained, the midwife attempted to dilate the os uteri by her fingers. This proceeding increased the irritation and contraction, and produced general convulsions. M. Carré, being called in, bled the patient and used the warm bath, but to no purpose. He then ordered the os tincæ to be rubbed with belladonna ointment every half-hour; and, after the third friction, the uterus became sufficiently dilated to permit the operation of turning, and the child was delivered, and lived. The ointment was made by rubbing up eight grammes of Ext. Belladonnæ with sixty-four grammes of cerate, and of this from two to four grammes were used each time.

CASE II. A woman, æt. twenty-one, was prematurely taken in labour at the eighth month. The waters had broken for some time, and, when M. C. was called, he found the os uteri so strongly contracted upon an arm of the fetus, that he could not introduce his hand. Having first had recourse to bleeding, &c., the same ointment was applied, and, after the fourth friction, the dilatation was sufficient to permit the operation of turning, and the extraction of a dead child.

CASE III. A man had suffered from retention of urine for twenty-four hours, without any relief from bleeding and baths. The catheter could not be introduced beyond two inches, on account of the spasmodic contraction of the urethra. As the patient had been able to make water freely previously to the attack, M. C., believing the case merely spasmodic, prescribed the belladonna, which he applied by friction with the ointment on the glans, and by applying to the perineum a poultice made with decoction of the leaves, and further moistened with a solution of the extract. In an hour or two the urine began to flow slowly, and he was completely relieved in three hours.

CASE IV. A man suffered a protrusion of voluminous inguinal hernia in attempting to lift a load. After ineffectual attempts at reduction, the use of bleeding, baths, &c., M. C. had recourse to M. Guérin's practice, introducing into the urethra a bougie covered with equal parts of cerate and extract of belladonna, and in half an hour's time he was able to reduce the hernia.

CASE V. A soldier, subject for some years to a hernia, and for which he used a truss, had the misfortune to break this in leaping a ditch, and his hernia protruded and became strangulated. He had been ill twenty-four hours, suffering great pain, vomiting, &c., when M. C. saw him. Bleeding, baths, and the taxis were tried in vain. The tumour was then rubbed with the belladonna ointment, and a cataplasm applied. The pains ceased in from half an hour to three quarters, and, the taxis being then admissible, it proved readily successful.

CASE VI. Another soldier suffered in the same way, and was relieved by the belladonna ointment after the failure of other means.

*Journ. des Connaissances Méd.-Chir., Mai, 1835.*

### III. Two Cases of Incarcerated Hernia cured by the use of Belladonna Ointment. By PIETRO PORTA, M.D. of San Zenone.

CASE I. A stout healthy man, æt. 50, upon lifting a heavy weight, was seized with a sudden pain, attended with tumour in the right iliac region. A medical man having recognized a crural hernia, bled the patient, and prescribed warm fomentations. The next day Signor Porta was called in, when the intense pain, meteorism, hiccough, vomiting, and obstipation, unrelieved by a second bleeding and the taxis, determined him to resort to the use of the belladonna, in the form of dried leaves 3j. to lard 3vj. This however could not be procured for a whole day, during which delay all the symptoms became much aggravated: nevertheless a few frictions with the ointment over the tumour caused it to disappear, with all its attendant symptoms.

CASE II. This was supposed to be a case of omental inguinal hernia, and occurred in a child of five years old. The tumour was inelastic, doughy, and irregular, giving rise to no prominent symptoms of suffering, but still, after several days, remaining irreducible by the taxis and warm baths. The belladonna ointment, applied every two hours for three days, succeeded in effecting the reduction, after the failure of every other means.

[Although the majority of the foregoing cases are far from presenting positive evidence of the efficacy of belladonna as a relaxer of the spasm present or presumed to be present in them, since similar cases terminating in like manner, without the use of this remedy, must have occurred to most surgeons of experience,—still they cannot be repudiated as unworthy the notice of the practitioner, according to the law of evidence commonly received in physic. To remove all doubt, a much greater number of successful cases must be adduced, or an equal number of similar cases must be treated with and without belladonna, and the majority of favorable results proved to be on the side of the treatment with this remedy. In respect of hernia, we must strongly protest against the adoption of any measures attended with loss of time and delay of the surgical operation, in a complaint of so urgent a nature as incarcerated hernia. When however, as sometimes occurs, through the strong opposition of the patient or his friends, an operation is impracticable, no mode of treatment which offers a chance of success should be neglected; and in such cases frictions with belladonna, harmless in themselves and soothing to the patient, are not only admissible, but are to be recommended, as supported by experience at least, if not by sound pathology.]

DR. MOTARD, of Turin, has found that a solution of belladonna, introduced into the nose, dilates the pupil effectually; and he is in the habit of moistening a pinch of snuff with a solution, by which means the pupil next to the nostril in which it is introduced is dilated in a minute or two. The dilatation lasts about two days.—This hint is worthy of trial in those cases of cataract where the patients are in the constant habit of using belladonna to improve in some degree their imperfect vision; as it is a more convenient process than the common one.]

*Giornale delle Scienze Medico-Chirurgiche, No. x. Aprile, 1835.*

### *On the Influence of Atmospheric Heat in the Cure of Wounds and Ulcers.*

By M. JULES GUYOT, D.M.P.

[It is not necessary for us to make any remarks upon this memoir. Some of the facts that it contains are interesting, and their bearing upon surgical practice, not to mention other considerations, is sufficient to recommend them to the attention of other experimenters and to practitioners.]

Rabbits were selected as the subjects of experiment, on account of the delicacy of their organization, and the facility with which their wounds suppurate. Three different kinds of apparatus were employed: the first consisted of a wooden box,

divided into four compartments, one above the other, and each capable of containing two rabbits. These open behind by a slide, and in the front is a trough which contains the animal's food. The whole is traversed by a vertical tube, an aperture in which opens into each compartment, the size of which may be varied at will. Beneath the inferior extremity of this tube is placed a lamp, which burns constantly, and, the heated air passing through the tube, elevates every compartment to the requisite temperature. The degree of heat is ascertained by a thermometer passed into each compartment through an aperture in its side. A strong cloth is nailed over the front of this apparatus, with openings allowing the animals' heads to pass through them; so that the bodies of the rabbits remain in the heated air, whilst their heads are free in the external air, and they are able to eat from their troughs.

[As the experiments from which results of a practical character were derived were those made in this apparatus, it is unnecessary to describe the other two; one of which was for immersing an animal entirely in an uniformly elevated temperature, the other for the application of local heat.]

In the apparatus described rabbits can support, for days or weeks, a constant heat of from 113° to 147° Fahr., without sweat, without loss of appetite, or other disturbance than slight acceleration of respiration, which is not always observed, and which often ceases entirely. The same effects take place when the temperature is between 77° and 97° Fahr.; but without exception, when exposed to a heat between 97° and 113° Fahr., there has been extreme languor, with no appetite, and hurried respiration.

The following effects of heat thus applied on wounds have been observed:—Of four simple incisions, exposed constantly to a temperature of 140° Fahr., two united by the first intention, in from four to six hours; the other two remained gaping, and furnished during twelve hours a serous exudation, which gradually became dry, and formed over the surface of the wound a shining, rose-coloured, thin, transparent varnish, which gradually cracked, whilst the wound diminished in extent. On the fourth day cicatrization was complete. This process had apparently taken place without inflammation; no suppuration occurred. Two incisions exposed to 122°, and two to 158° Fahr., united in a few hours, with the same phenomena as those just mentioned. Two incised wounds, exposed to a temperature of 86° Fahr., healed less readily; and it was only after the seventh day that cicatrization, which occurred without either inflammation or suppuration, appeared sufficiently solid to be exposed to the open air: one of these cicatrices continued sound; the other, in the course of twenty-four hours, had ulcerated and began to suppurate. Two incised wounds, exposed to the open air at 57° Fahr., remained twenty-four hours without any apparent change; the borders of the wounds then swelled, and their surfaces furnished a considerable quantity of serosity. They afterwards became covered by greyish yellow, soft, and opaque crusts. Towards the fifth day pus could be detected beneath, and on the sixth it escaped; the incrustations were then taken off, when the wounds presented a red and healthy appearance. On the seventh day a new crust was formed, and the wounds had contracted. The pus again collected, on the eighth day, beneath the crusts, which were again removed. On the ninth and tenth days, the borders of the wounds approached each other, and were covered with a linear incrustation, which fell on the twelfth day, leaving perfect cicatrices.

Elevated temperature was next applied to wounds in various conditions,—some nearly healed, others half incrustated; some suppurating; and four quite sanious, pale, and making no progress towards cicatrization. In these various states they were placed in the apparatus already described; two at 104°, and one at 122° Fahr. Three other wounds were renewed, either by removing their crusts or by making new incisions; one was placed in a heat of 86°, the other of 140° Fahr. Two more were similarly renewed, and in two other rabbits fresh wounds were made in the muscular substance of the thighs; after which they were all exposed to elevated heat. On the following day, the suppuration of one wound had much diminished; the four sanious wounds were red and almost dry; those which were renewed were covered by the varnish; the two new wounds still furnished a serous

exudation. On the second day, the suppurating and four sanious wounds had incrustated. The rose-coloured varnish was found upon the two fresh wounds, and over those which had been cleansed it remained without any suppuration during four days. During the night of the sixth day the lamp was extinguished. On the seventh, the thermometer being at 60° Fahr., the two cleansed and the two newly inflicted wounds were suppurating abundantly: the lamp was again lighted, the crusts removed, and the wounds cleansed. Three days were required to restore them to their previous state. By the fourteenth day of the immersion in the heated air no wounds remained uncicatized.

At the suggestion of M. Magendie, M. Guyot was induced to try the effects of elevated temperature on the process of ulceration in man.

The apparatus employed is a box of an oblong shape, twelve inches long, and ten inches square at either end; closed at both extremities by a linen cloth nailed to the box, and having in it an aperture, through which the limb which is the subject of experiment may pass. This aperture is bordered by a running string, which allows of its being accurately fitted to the limb. The state of the wound is examined by a little door in the top of the apparatus. A tube is inserted into the bottom of the box horizontally, bent at a right angle; beneath its other extremity is a lamp. The degree of heat is regulated by a slide in the box, and estimated by a thermometer inserted into the same side. Those parts of the limb which are not contained in the box are supported by cushions; the whole is then fastened by tapes to the sides of the bed. The patient must observe perfect quietude.

Among the ulcers submitted to this mode of treatment was one of four years' duration, the sequel of a comminuted fracture, and which had resisted all the methods of treatment which had been employed; another, in an aged subject, old, painful, and indolent, which had occasionally cicatrized, but only for a short time; a third, of many years' duration, sanious, and covered with dark livid spots.

The effect of dry heat was favorable in all; in some it was continued until cure was effected. The ulcers became dry, inflammation and suppuration diminishing; pain was lessened, or entirely ceased; incrustation took place; the cicatrices were well formed, and shewed no tendency to ulcerate.

The previous observations having been submitted to the Academy of Sciences, M. Roux was appointed to verify them by more experiments.

[We may select the following case from those which are recorded, as most strongly illustrating the effects of heat upon wounds.]

An ulcer of eight years' duration, occupying the whole of the posterior, inferior, and external part of the left leg, having an average diameter of four inches, was subjected to a temperature of 97° Fahr. The ulcer had been variously treated, and with some benefit, but had arrived at a state in which for three months it had made no favorable progress, under any means employed. The cicatrix surrounding it was thin and tense; its surface bled on the least touch, and the ulcer was situated over an enormous swelling of the fibula, and extended into a depression, which was owing to the loss of the tendo Achilles. The leg was deformed, and in such a condition that M. Roux conceived the only hope for the patient to consist in amputation of the limb. The constitution of the individual was extremely irritable, and he unwillingly submitted to the treatment. During the first two days suppuration was abundant, and the leg and foot swelled; on the third day they diminished, and some incrustation took place. During five weeks (the time that the treatment was continued,) the healing process went on, and at the end of this period the ulcer measured only ten lines by six. The cicatrization now stopped, and the wound bled on the slightest touch. The patient left the hospital, being unwilling to submit to amputation, which was proposed to him.

The following conclusions are drawn by M. Guyot from his experiments:

1. Wounds have always healed more rapidly in a temperature above 85° Fahr., without dressing, than with or without dressing in a lower temperature.
2. Some wounds have healed in a heated atmosphere, which have not done so in one of the ordinary temperature.
3. In the former, the majority of wounds have healed without inflammation or suppuration; in the latter, this has not been observed.

4. Wounds have ceased to suppurate when exposed to heat, and have undergone the same healing process as fresh wounds.

From the effects of heat on man, it may be remarked that

1. An ulcer will heal, without any other means than the local application of increased temperature.

2. Heated air may give rise to the formation of a large cicatrix, in forty-eight hours, over an old ulcer.

3. In all cases, it aids, and constitutes one of the most favorable conditions for cicatrization.

4. Instead of giving rise to inflammation, it may check that which exists.

5. It acts to a certain degree on an internal malady.

6. It may be borne at 115° Fahr. during several weeks, without giving rise to serious accidents.

The employment of heat as a remedial agent, M. Guyot considers as evidently indicated in a certain number of cases: for instance, of local heat in wounds, ulcers, strumous engorgements, rheumatic pains, and white swellings; of diffuse heat (as by the first apparatus described,) in sciatica, accidental amenorrhœa, paraplegia; of general heat, in amenorrhœa of young women, the scrofulous diathesis, and phthisis. With regard to its beneficial operation in the last-mentioned disease, it is asked whether it may not be inferred, from the marked improvement which has followed the exposure of ulcers on the external surface to increased temperature, whether a similar advantage might not be derived from its application to internal ulcers, through the medium of respiration?

*Archives générales de Médecine, 3me Serie, tome 8. Juillet, 1835.*

#### *On the Treatment of White Swellings. By M. LISFRANC.*

M. LISFRANC defines a white swelling to be a chronic enlargement of a joint. He does not attempt, as Sir B. Brodie has done, to classify diseases of articulations according to the tissue which is primarily affected. Even when the extreme mobility of the joint proves that the ligaments are destroyed, or when, on bending the joint, a grating sound is heard as if two surfaces rubbed together, he does not consider amputation indispensable. The most dangerous white swelling is a tumour which gives on pressure the sensation of a spongy tissue, never acquires a very considerable size, and does not always give pain. It is formed (as is ascertained by dissection,) of a reddish substance, like erectile tissue, in which there are granulations analogous to pulmonary tubercles. Suppuration soon takes place in this disease, and sanious pus with portions of the erectile tissue escapes. If amputation is not consented to, M. Lisfranc applies moxas, to endeavour to destroy the anormal tissue by inflammation.

*Treatment of White Swellings.* If there is any visceral disease, either preceding the local affection or coming on during the cure, M. Lisfranc directs his attention to it, and does not attempt to cure the disease of the joint; for in such cases he has found that a diminution of the local affection was followed by an aggravation of the visceral disease, and that the cure of the latter relieved the former malady. Absolute rest of the limb is necessary, in the position which will be most convenient, should ankylosis take place. In hip disease, M. L. fixes the leg, to prevent luxation. As regards treatment, it is important to ascertain whether the *stage* is acute or chronic: not that there is acute inflammation of the joint, but rather the state in which there is increased heat of skin, and permanent or remittent pain, which may be called sub-inflammation. In this stage local bleeding is beneficial, regard being had to the strength of the patient and to the effect of depletion upon the constitution: thus, in scrofulous and debilitated subjects, from twelve to fifteen leeches should be applied, and, if the patient is strong, from forty to fifty. In general, the blood should be allowed to flow for two hours. If the pain and heat continue, twenty more should be applied the next day, or the day after that. If great debility is produced, poultices and tepid baths are had recourse to, or narcotic applications, if the pain is increased. When the powers are invigorated, leeches should be reapplied until the tumour goes into the complete chronic

stage. This may be after six weeks, or even after as many months. The return of the subacute symptoms requires leeches. M. Lisfranc has employed calomel and opium so as to produce rapid salivation, but not with much success: in the chronic stage he has not been more fortunate, but he intends to make more experiments with this medicine. When the chronic stage is fully established, and has at least existed eight or ten days, M. Lisfranc employs excitants. He considers that a few leeches determine a flow of blood to the part, and he therefore applies from four to ten, and allows them to bleed half or three-quarters of an hour. In some cases there is a diminution of the tumour the next day: it may, however, be increased in size, but this is generally temporary. If after six or eight days there is no improvement, the leeches must be repeated; but if, after two or three applications, the symptoms do not yield, other means must be used. If there is any diminution, from five to ten leeches should be applied every eight or ten days.

Indiscriminate compression is bad; but, when the tumour is soft and oedematous, it may succeed. If there is any probability of its reproducing the inflammation, a simple roller should be first applied: subsequently, stronger compression should be made by means of cones of agaric, two inches in height, with their bases resting on the tumour, and the mass passing at least half an inch beyond the swelling in its whole circumference. These are to be fixed with a roller. This compression should be continued for three months after the tumour is apparently cured, gradually diminishing the pressure. Kneading the joint previously to compression is useful in obstinate cases.

The actual cautery is remarkably beneficial when the tumour is so chronic that no pain is produced on walking. Hydriodate of potash, rubbed in externally, is the form of iodine which M. Lisfranc likes, and he only employs it in very chronic cases. Donche baths of all sorts, blisters, moxas, and setons, are sometimes useful: their effects must be carefully watched. After the patient is cured, exercise should be taken very cautiously and gradually.

*Revue Médicale, Avril et Mai, 1835.*

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*Chlorine Gas as an Injection for the Cure of Hydrocele.* By M. DECONDÉ.

Dr. DEBLOIS, of Tournay, was in the habit of performing the radical cure of hydrocele by injecting chlorine gas instead of red wine. His premature death prevented him from making known the plan; but M. Decondé, who has seen its advantages, has described it. The chlorine gas is contained in a bladder, to which is fixed a pipe and stop-cock adapted to the canula of the trochar, into which it is fixed after the fluid has been evacuated: the stop-cock is then turned, and the bladder pressed so as to force the gas into the tunica vaginalis. When this is distended, the pipe and bladder are removed, and the thumb placed over the mouth of the trochar, so as to prevent the escape of the gas for the space of two minutes; it is then allowed to escape, and two or three repetitions of the injection are made, which are sufficient for the cure. The advantages are—the simplicity of the apparatus, and the whole sac being equally distended and exposed to the contact of the gas, which is not the case with fluid injections, which always gravitate. The danger also which sometimes occurs from the fluid being forced into the cellular tissue of the scrotum is avoided. M. Decondé proposes that the same remedy should be used in the cure of other diseases characterized by the secretion of serum in various cysts.—*Bulletin Medical Belge. Janvier, 1836.*

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*On Traumatic Ophthalmia.* By Dr. SCHINDLER.

[CONSIDERING every fact as important which serves to illustrate the effects of injuries of the eye, we have perused with much satisfaction this paper by Dr. Schindler, whose name is already favorably known to British oculists, from his little work on Chronic Iritis after Keratonyxis.]

1. *From Burns.* The author first directs our attention to burns of the eye, and especially to burns from gunpowder. He remarks, that singeing of the eyebrows and eyelashes, formation of blisters on the eyelids and their edges, more or less



considerable vesications on the sclerotica and cornea, and grains of unignited powder fixed in the cornea, are the less serious effects of an explosion; while, in more severe cases, the destroying force manifests itself in laceration of the iris, separation of the iris from the choroid, laceration of the retina, or even destruction of the whole textures of the eyeball. Setting aside the severe cases in which the preservation of the organ is impossible, the bad consequences of burns of the eye are by no means in direct proportion to the extent of the injuries received. Considerable lacerations are sometimes followed by no permanent bad effects; while, in other cases, the mere dazzling of the eyes by the sudden flash of light, especially when the explosion takes place very close to the eyes, produces the most disastrous effects on the sight. Dr. Schindler is of opinion that, in the last-mentioned cases, the over-stimulation produces an *erethismus* of the retina, passing into chronic inflammation and ultimate blindness. The patient, in one case particularly referred to, saw perfectly immediately after the explosion, and congratulated himself that his eyes were safe; but a speedy irritability to light, degenerating into severe photophobia, accompanied with slight external ophthalmia and considerable lachrymation, was the forerunner of an *amaurosis erethica* of the most dangerous description.

2. *From slight Injuries.* It sometimes happens, after apparently trivial injuries of the eyeball, as a small cut of the cornea, a painful degree of pressure on the eye, the eye being struck by a bit of turf, or the like, that there immediately follows such a deprivation of sight, that the patient perceives objects only as if through a thick cloud, or that the eye even loses entirely its sensibility to light. There is no pain, and at first no appearance of inflammation. It is only after some days that a slight redness of the conjunctiva, and sometimes of the sclerotica, sets in. The pupil is black, but motionless, and either regularly or irregularly dilated. By and bye, the iris becomes inflamed, but the patient manifests no intolerance of light. Hypopium, if it occurs in such a case, may be removed; but the eye will, notwithstanding, always become atrophic, the cornea remaining quite clear, and only gradually shrinking. Mr. Lawrence refers such symptoms to laceration of the retina; but this opinion, grounded solely on the sudden loss of vision, does not appear sufficiently borne out. The nature of the injury scarcely admits, in some of the cases, of such an explanation, and seems to point rather to a paralysis of the ciliary nerves.

3. *From severe Injuries.* Another and a very different form of traumatic ophthalmia arises from similar, but much more severe, injuries of the eye. Dr. Schindler has seen it follow a penetrating wound of the cornea or a blow with the fist. The patient, immediately after the injury, sees quite well, has no pain, and the redness of the conjunctiva is inconsiderable. The pupil is black and circular, not distorted, but slow in its motions. After some time, *iritis* comes on with its usual symptoms: the pupil, however, is at first considerably dilated, it loses its natural colour, and even in a few days becomes of a fine sea-green, as in some cases of glaucoma. At the same time vision is extinguished. The cornea and the aqueous capsule do not in general suffer, so that the change behind the pupil is distinctly seen. Dr. Schindler considers it as impossible to decide whether that change depends on an alteration of the choroid pigment or of the vitreous humour. If, in the progress of the case, the cornea and its lining membrane should become nebulous, the change of colour in the pupil can be perceived only so indistinctly that the observer will be at a loss whether to attribute it to cataract or to exudation. He will recognize his mistake, however, as soon as the cornea again clears. The *iritis*, in such cases running a subacute course, is attended with but little pain, and seldom produces any puriform effusion. After some weeks, the contracted pupil is closed by exudation, and of course all further observation of the deep-seated textures of the eye is prevented. This form also of traumatic ophthalmia always ends in atrophy, although Dr. Schindler acknowledges he long flattered himself that in such cases he might have preserved at least the form of the eye.

[We have frequently observed this form of traumatic ophthalmia. With regard to the green colour which appears behind the pupil, and which bears so close a resemblance to glaucoma, it is plain that either glaucoma has been actually induced

by the injury or subsequent inflammation, or a state similar in its effects to glaucoma. It is now well known that glaucoma is no opacity of the vitreous humour, nor reflection from an opaque retina, but that it depends chiefly on a change of colour in the posterior lamellæ of the lens, by which these, having assumed a reddish brown or deep amber hue, absorb the violet and blue rays of the light entering the eye, leaving the yellow and green rays but little affected; whence results the green appearance of the humours in that disease.\* Various substances in nature present, as is familiarly known, a different colour, according as they are seen by reflection or by refraction;† and the glaucomatous lens is one of them. Seen in the eye, by reflected light, it is green; seen out of the eye, by refraction, it is of a deep amber or reddish brown. Now, in the traumatic ophthalmia in question, either the lens has undergone a similar change of colour, as in glaucoma, or behind the lens there exists an effusion or deposition, productive of the same optical effect.]

*Zeitschrift für die Ophthalmologie*, B. v. H. 1. 1835.

*On Foreign Bodies adhering to the Cornea, and the Manner of removing them.*  
By Dr. SCHINDLER.

[The observations in this paper apply only to those very minute foreign bodies of a black colour, which are called in Germany *Stahl-funken* (steel-sparks,) and occasionally in this country *fires*.]

It is remarkable that these bodies are met with only on the cornea, sometimes just at its edge, but generally near its centre or on its lower half, and never over the sclerotica. Notwithstanding their general resemblance, however, they differ in different cases. Sometimes they are particles of iron which have been projected in an ignited state against the eye, when a person is striking fire with flint and steel, sharpening steel instruments, or the like. In this case the particle, when viewed with the microscope, is not, as Weissenborn declared, angular, and likely by its sharp points to injure the cornea, and wedge itself in it; but, on the contrary, smooth and round, lying more or less firmly in the little pit which it had formed for itself in the cornea, and, even when it has remained there for weeks, leaving no oxide behind it. On removing such bodies, we never find any sloughy shreds of cornea attached to them, nor any brown burned spot left on the cornea. In other cases, the foreign bodies in question consist of minute, unignited, metallic splinters, driven with force against the eye; as sometimes happens in the act of filing. Being sharp and angular, they remain firmly wedged in the cornea: their fine points, having become oxidized, are apt to break off when the bodies themselves are removed, and form a reddish brown stain of the cornea. Shreds of the corneal conjunctiva are not unfrequently found adhering to such particles after they are removed.

Almost as common as these are little black bodies, not of metallic origin, often vegetable; sometimes, as is discovered by examining them with the microscope, the germs of grasses, in other cases particles of coal. With the naked eye it is often impossible to distinguish between these and metallic particles.

[Dr. Schindler does not think the presence of such foreign bodies as above described so very productive of danger to the eye as some have done. We agree with him in the opinion that the eye is more frequently destroyed by the rude attempts of ignorant people to remove such bodies from the cornea, than by allowing them to remain. That they should always be removed is certain, and we believe the best instrument for the purpose is a small, bent, elastic, silver spatula. The operator raises the upper eyelid of the patient with his thumb, taking care not to touch the lower eyelid nor the cilia of either eyelid; he now tells the patient to look at him, and with the edge of the spatula the foreign body is in general easily unseated. This is not the method recommended by Dr. Schindler, who uses a

\* Philosophical Magazine, for June, 1832, page 470.

† Experiments and Considerations touching Colours. By the Rev. Robert Boyle. Third Part. Exp. 10 and 11. London, 1670.

camel-hair pencil for the purpose; a safer instrument certainly than the extraction-knife, but which we should think in many cases insufficient to effect the object in view.] *Zeitschrift für die Ophthalmologie*, B. v. H. 1. 1835.

*On the Power of Nature in curing severe Diseases of the Eye.* By Dr. LORCH.

[We pass over the introductory matter contained in this paper, and give an account of the cases only, in a condensed form.]

**CASE I.** *Closure of the Pupil, with subsequent Restoration of Vision.* This seems to have been originally a case of scrofulous ophthalmia: three ulcers of the cornea formed, followed by three protrusions of the iris. These degenerated into a staphyloma racemosum, the pupil closed, and vision was lost. Calomel and senega were administered, the latter being a remedy much spoken of by some German practitioners in affections of the cornea; blue ointment, with belladonna, was rubbed in round the eye; and, after salivation took place, the patient took camphor and opium. The redness and pain abated, but the pupil continued closed. After some weeks, during which Dr. Lorch did not see the patient, (a girl of thirteen,) she began to see, and could at length read with the bad eye. He scarcely believed it; but found, on examination, that the three prolapsed bits of iris had quite shrunk, that three leucomata had formed, and that between these there was a small motionless pupil, opposite to which the cornea was luckily clear. An engraving illustrates the appearance of the eye.

**CASE II.** *Dislocation of the Lens, with Recovery of Sight without Operation.* This is the case of an English boy, of seven years of age, residing at Geisenheim, in whom the left crystalline capsule burst in consequence of a fall on the back of his head. The pupil was expanded and fixed, and the lens changed its place on every motion of the head. At first it was transparent, and its edge was seen to glance like a diamond. When the patient leaned forward, the upper third of the lens fell into the anterior chamber, while its lower edge rested on the dilated pupil; when he bent the head back, the lens fell again into its natural place. In the former position the patient saw better. At length the lens grew opaque, and sight became proportionally diminished.

[Dr. Lorch considers this case to have been one of capsulo-lenticular cataract; but we must confess that the proofs that the capsule was in this stage opaque, or that it was afterwards absorbed, do not appear to us satisfactory.]

Dr. Lorch administered small doses of calomel and sulphate of quina, and rubbed in mercurial salve round the eye. He seems to have been contemplating extraction, when the lens sunk down into the posterior chamber, and was gradually absorbed. The upper half of the pupil cleared first, vision improved, and at length the patient was able to distinguish the letters of a book. What is remarkable, the right eye seemed to be becoming like the left, when the patient left Germany for England.

[We may remark, that cases of the kind here related by Dr. Lorch are sometimes regarded as examples of spontaneous dislocation or prolapsus of the lens, the patient not being able to recall to his recollection the receiving of any blow on the eye or head likely to have given rise to a rupture of the crystalline capsule. There also appears to be generally a degree of amaurosis attendant on such cases.]

*Zeitschrift für die Ophthalmologie*, B. v. H. 1. 1835.

## MIDWIFERY.

*Case of Cæsarean Operation performed three times successfully on the same Individual.* By Dr. MICHAELIS, of KIEL.

THE patient was born in 1795, and during her childhood suffered from rickets to such a degree that she could scarcely walk alone till twelve years of age. The lower extremities, the spine, and pelvis, were much distorted. Her height is four

feet three inches;\* the trunk is disproportionately long. On examination per vaginam, the antero-posterior diameter, from the lower edge of the symphysis pubis to the promontory, is about two and a half inches; from the upper edge of the symphysis pubis to the promontory, it is about two inches; the sacrum is nearly straight. Her first pregnancy was perfectly natural; the first pains having made their appearance, at the end of forty weeks, on the 16th of June, 1826. The os uteri dilated, and the membranes ruptured during the night. The Caesarean operation was determined on the evening of the following day by the two medical men who had been summoned, but, as the necessary preparations could not be made immediately, it was deferred till the morning of the 18th; twelve leeches were applied to the lower part of the abdomen the night before, and some emulsion with nitre given to allay a feverish attack.

*First Operation.* On the morning of the 18th June, she was placed on a table nearly horizontally, on account of the abdomen being very pendulous. Dr. Seidel applied a napkin dipped in oil around the spot selected for the incision, and pressed the uterus, which was much inclined to one side, into the median line of the body, where he held it firm. The incision commenced in the linea alba, two inches below the umbilicus, and terminated two inches above the symphysis pubis. The divided integuments instantly separated a hand's breadth from each other. As the tension of the abdominal parietes was still so considerable as to prevent the finger being introduced, the peritoneum was divided by passing a director beneath, and cutting it with a blunt-ended bistoury. As soon as this was effected, Dr. Seidel pressed back some convolutions of intestine, which had protruded on both sides, so quickly that they produced no interruption to the operation.

When the uterine parietes were divided, the external wound required further dilatation before the child could be extracted. As the uterus contracted strongly, the placenta was immediately separated and brought away. A considerable hemorrhage from the edges of the uterus followed: cold water was poured upon it from a height; firm contraction followed, and the hemorrhage ceased. The child had been evidently dead some time. The lips of the wound came into such exact apposition that the suture was not deemed necessary, and they were merely held together with long strips of adhesive plaster; charpie and a common bandage completed the rest of the dressing, and the patient, who had been perfectly quiet during the whole operation, was placed in bed upon her back. A little cool drink was given her; a mixture of Decoct. altheæ, Potass. nitras, and Ol. olivæ, was ordered; and at night she took a grain of acetate of morphia. Pulse 120, small and hard. The night passed tranquilly; she slept well, slight perspiration, much thirst.

19th June.. Feverish during the night. Urine passed without the catheter. The bowels not being open, she took every hour a tablespoonful of the following mixture:—R. Decoct. Altheæ, ʒvj.; Ol. Amygd. dulc., Syrup. Rhæi, aa ʒj. M.

21st June. Bowels have been moved seven times; pain in abdomen diminished; no fever.—Half a grain of morphia was given several times daily until the 29th: she took in all one scruple.

23d June. The dressings were undone: the wound had united to the extent of three inches. The edges of the lower portion were not united, and were again brought together by fresh strips of adhesive plaster.

25th June. Felt very well: appetite good. Took Decoct. cinchonæ with camphor, and had some broth.

The only inconvenience of which the patient complained, and which continued to annoy her to the end of the month, was a scalding in passing water, which frequently produced retention of urine, requiring the catheter. An enema was necessary almost daily, to procure the necessary relief of the bowels. The lochia were regularly secreted; the milk was sparing.

In the course of three weeks the wound was completely closed and cicatrized. On the 4th of July she sat up for the first time, and on the 10th she left her bed. The cicatrix was of about the breadth of a finger; the abdomen was rather pendu-

\* These numbers have been reduced to the English measure.

lous, and required a bandage. The catamenia returned in eight weeks after the operation.

Dr. Zwanck, the operator, attributed much of his success, and the remarkable absence of unfavorable symptoms, to the dressing having been made without suture, and to the free use of morphia.

*Second Pregnancy.* She menstruated for the last time on the 13th April, 1829. She quickened towards the end of August. She enjoyed good health during her pregnancy, except that the abdomen, being pendulous, hindered her somewhat in walking.

She was admitted into the Lying-in Hospital at Kiel, in December, 1829. External examination showed a strongly-marked pendulous belly: this was evidently produced by actual dilatation of the uterus, and great distention of the abdominal parietes in the immediate vicinity. The cicatrix had now extended to the length of nine inches; it was four inches broad. The fundus uteri was high above the umbilicus; the distance of the umbilicus from the pubis was full fourteen inches, (fifteen English;) whereas, in her first confinement, it was stated to be eight and a half, (nine English.) The uterus appeared to be in close contact with the abdominal parietes, and at the lower part of the cicatrix was evidently united with them for the space of an inch and a half.

In the beginning of January, 1830, she frequently complained of great distention of the abdominal integuments, at the lower part; the veins in the cicatrix were much dilated; and the little scars, where the leeches had bitten in her last pregnancy, now partially opened, and once during the night bled considerably.

*Second Operation.* Pains commenced between the 20th and 21st of January. On the morning of the 21st, the os uteri was scarcely at all dilated; an extremity could be felt through the vagina. By half-past four P.M., the os uteri was dilated about three fingers' breadth; the pains were strong, and membranes tense. As an extremity presented, and would necessarily prolapse in all probability with the cord, as soon as the membranes ruptured, it became no longer safe to delay the operation. Having therefore evacuated the bladder and rectum, it was commenced by the celebrated Wiedemann, of Kiel, in the presence of Professors Luder and Deckmann, Dr. Michaelis, and several students. The two latter gentlemen supported the abdominal integuments with their hands. The incision, six inches in length, was made on the left side in the cicatrix, about an inch from the median line, where the child was felt most distinctly, commencing at about five inches below the umbilicus, and terminating about three inches from the os pubis. The uterus was then divided layer by layer; a few vessels spouted for a moment. The placenta appeared in the wound, which was dilated full four inches. During a pain the placenta protruded, and occupied the opening. To separate the placenta on the right side, rupture the membranes, and extract the child (which had presented with a thigh) as far as the head, was the work of a few seconds. A powerful contraction of the uterus now retained the head for a few moments, and the child's life appeared in considerable danger: gentle traction soon released it, and the placenta followed. The operation lasted barely five minutes. The child, a girl, soon cried briskly, and the uterus contracted well.

The wound of the integuments was secured by three sutures, made after Grafe's plan, and supported with strips of adhesive plaster, and a small seton placed in the lower end. The patient, who had borne the whole operation without a murmur, complained of great pain in making the suture, and was very impatient.

After the operation the pulse was very slow and hard; her appearance was unchanged. On account of severe pains in the abdomen, (apparently after-pains,) twenty drops of Sp. etheris comp. and eighteen of Trac. Opii were given. She continually demanded morphia, which was not given. At eleven in the evening, as the pains were unabated, she had one grain of opium; at three-quarters past twelve she fell asleep, but was very restless from the after-pains.

Considering all circumstances, her recovery was favorable, so that, on the 21st of February, she was up for some time, and felt quite well. By the beginning of March the wound was entirely cicatrised, except a place or two in the skin. On careful examination, a fistulous opening was discovered, from which a little mucus

could be squeezed. A probe which was introduced caused repeated bleeding, and at length penetrated downwards more than an inch into the uterus, which had become firmly united with the abdominal integuments. Injections into the fistula passed away immediately by the vagina, and a small quantity of muco-purulent fluid was constantly discharged from this passage. This fistulous canal resisted all attempts to make it heal until the patient left the hospital.

The union of the uterus with the abdominal integuments had so much increased this time, that, when the organ was fully contracted, it occupied a space of at least an inch and a half, and consisted therefore of its entire anterior surface. The child died on the 19th of February, of induration of the cellular tissue.

*Third Pregnancy.* The catamenia appeared in the course of a few weeks after her return, and the fistulous opening healed shortly afterwards of itself. In the middle of June, 1831, the catamenia appeared for the last time; and, at the beginning of March, 1832, she was again admitted into the Lying-in Hospital of Kiel. Her pregnancy had passed over without any peculiar inconvenience.

Early on the 28th of March pains made their appearance; by ten the same evening, the os uteri was transversely dilated to the extent of three fingers' breadth, and the membranes were very tense during a pain. The head could be distinctly felt above the pubis. The patient looked forward with confidence to the operation, but forbade most expressly the suture being made this time with Gräfe's large needle.

*Third Operation.* Having evacuated the bladder and rectum, Dr. Michaelis commenced the operation in the presence of Professors Weidemann and Deckmann, &c.; the latter supported the abdominal parietes. The spot selected for the incision was to the left of the second cicatrix, where the child could be felt most distinctly. It was made about five inches long, in an oblique direction from above and outwards, downwards and inwards. On enlarging the incision into the uterus with a blunt-pointed bistoury, the liquor amnii escaped. An elbow presented, close behind which was the left knee: this latter was brought out; as, however, the nates did not follow gentle traction, the opening was dilated somewhat, and the child was extracted without difficulty. It was a boy, and cried immediately. The placenta was quickly separated, and brought away. Till this moment no fluid had escaped into the abdominal cavity, but now, as the uterus contracted imperfectly, a stream of blood issued from the wound: this was soon stopped by pouring water from a considerable height above it. No convulsion of intestine protruded. The pulse was slow, not small. Some wine and Tinct. Opii were given her.

The healing of the wound advanced regularly until the 16th of May: there were some little places which had not cicatrised over, but these were quite closed in a few days more. On the 25th of May, Dr. Michaelis discovered another small opening in the lower third of the wound, leading through a fistulous canal into the uterus, which was firmly united to the abdominal integuments.

27th of May, the patient left the hospital with her child in perfect health. News was received of their good health on the 10th of June, and that the fistulous opening had healed. The child died sometime afterwards of scarlet fever.

*Neue Zeitschrift für Geburtskunde*, B. iii. H. 3. 1835.

#### *Report of Cases at the Lying-in Hospital at Dresden, during the Years 1833 and 1834.*

DURING 1833, 307 patients were delivered, giving birth to 314 children; amongst which were five cases of twins and one of triplets. Artificial assistance was required in thirty-seven cases: in thirty-one of these the forceps was applied; in three, extraction with the hand was used; in one case, paracentesis of a hydrocephalus; in one, perforation; and in one the Cæsarean section.

The hand was required to be introduced for the delivery of the placenta in thirteen cases: viz. in three on account of profuse hemorrhage, and in ten on account of preternatural adhesion to the internal surface of the uterus.

Of the 314 children, 152 were males, 161 females. The sex of an embryo of two months was not ascertained.

One boy and four girls were born before the twenty-eighth week; five boys and eight girls were born between this and the full period. Three boys and one girl were born in a state of asphyxia. Eleven boys and thirteen girls were born dead. Six boys and five girls died in the hospital after birth.

The longest child born alive measured 22.37 inches;\* the shortest, 14.91 inches. The heaviest weighed ten, the lightest two and a half pounds.

Of the patients, 297 were discharged in good health; two were sent to the infirmary of the town; five died.

The Cæsarean section proved fatal to the mother; the child was saved. The operation lasted seven minutes; twenty minutes more were lost in producing contraction of the uterus, to stop hemorrhage. In order to prevent loss of time in applying the bandages, some strips of adhesive plaster, three inches broad, were placed under the loins before the operation, of such a length as nearly to encircle the abdomen twice. The patient died on the fifth day, of inflammation.

In 1834, 236 women gave birth to 242 children; there having been four cases of twins, and one of triplets. A case of complete prolapsus uteri and vaginæ (not frequent) was also admitted.

Artificial assistance was required in thirty-seven labours; the forceps was applied in twenty-nine cases; extraction by the hand in four; one child was turned; in two the head was perforated; and in one case embryotomy was required. The placenta was extracted in fifteen cases.

Of the 242 children, 115 were boys, 127 were girls. One boy and one girl were born before the twenty-eighth week; twelve boys and thirteen girls between this period and the full time. Four boys and one girl were born in a state of asphyxia; twelve boys and eight girls were born dead. Eight boys and two girls died in the hospital after birth. The longest child measured 21.30 inches; the shortest, 14.38. The heaviest weighed nine and a half; the lightest, two pounds.

Two hundred and thirty-three patients were discharged well; eight died.

*Neue Zeitschrift für Geburtshunde*, B. iii. H. 3. 1835.

*On the Acidity of the Catamenial Blood; and on the Theory of its Origin.* By M. C. RETZIUS, M.D., of Stockholm.

It is universally known that the menstruous fluid does not coagulate. The cause of this has been sought for in the absence of fibrine in it, said to be ascertained by chemical analysis; a result supposed to be confirmed by the slowness with which it runs into putrefaction. Oslander and others state that it can be kept even for a whole year without becoming putrid. Now, considering the speedy putrefaction of all other kinds of blood, and assuming (as was done) that the cause of this disposition was the great quantity of azote in the blood, the conclusion was very natural that, as the fibrine contains most azote, the slow putrefaction of the menstruous blood might be owing to the want of fibrine.

These opinions and inferences are opposed by Dr. Retzius, in a memoir lately published by him in the *Eyr*. He contends that, if the menstruous blood contained no fibrine, the rest of the blood of the female ought to contain more than that of the male, that the female ought therefore to be more subject to inflammatory diseases, which is not the case, &c. He further maintains that the disposition of a substance to putrefaction does not depend on the greater or less quantity of azote contained in it; since *caffein*, which of all substances, next to urea, contains most azote, does not become putrid, whether dissolved in water or not, or even when exposed to heat. Moreover, by microscopical experiments, Dr. Retzius convinced himself that the menstruous blood contained the same globules, as to form, colour, number, &c., as other blood.

In the course of his experiments, Dr. R. was led to apply litmus paper to menstruous blood, and he was much surprised to find that the blue colour was very

\* The inches are necessarily put in decimals, having been reduced from the French measure. The species of weight is not stated, but we presume that it is the Medizinal Gewicht, which is about the same as our Apothecaries' weight.—Rev.

quickly turned red by it; from whence he inferred its superior acidity to ordinary blood. By further examination, he discovered that this acid quality of the fluid depended on the presence of free phosphoric and lactic acids. If subsequent experiments confirm this fact, it is easy to explain the non-coagulation of the catamenial blood.

[The following is Dr. R.'s explanation of the mode of formation and operation of the acids.]

It is obviously nature's intention to produce a *remora* and congestion of blood in the uterine vessels. This physiological disposition depends partly on the great number and frequent anastomosis, in the uterus, of the arterial branches derived from the spermatic, uterine, and internal pudic arteries; partly on the thinner conformation of these arterial branches; partly on the condition of the veins in the same part,—their ramifications and want of valves; and partly on the greater relative volume of the aorta in the female. During this congestion, free phosphoric and lactic acid are formed in the substance of the uterus, and, when formed, alter the quantity of the blood in the congested vessels, by dissolving or otherwise modifying its fibrine, so as to prevent it being afterwards separated from it; just as fibrine, when dissolved in an acid out of the body, cannot be recovered in its original form.

Dr. Retzius further asserts that, after the evacuation of the acid blood accumulated in the uterine vessels by the natural process, if blood still continues to be discharged (as in menorrhagia,) it coagulates, because there has not been time for the formation of the acids in the uterine vessels; and he has found, in a woman affected with profuse menstruation, that, during the first three days, when there was no coagulation of the catamenial fluid, this was acid, and that afterwards it began to coagulate, and at the same time lost its acidity.

Dr. R. conjectures that, during the pregnant state, when fibrine is so necessary to the process going on in the uterus, probably no acid is formed in its blood; and he states that, at the first catamenial period after delivery, the blood is not nearly as acid as it becomes afterwards. He further remarks, as being in accordance with his views, that the formation of free acids takes place at different periods in other organs, and during the performance of other functions: as, for instance, in the preparation of the gastric juice, in the urine during the existence of morbid processes in the system of the *vena porta*, as in gout, &c.

[It is quite needless to inform our intelligent readers that there is much loose argument and pure hypothesis in the foregoing observations. In the present state of medical science, however, we are unwilling to pass over anything which may tend to direct the mind of the student and practitioner to a closer examination of the physiological processes taking place in the human body, and generally to the department of animal chemistry, from the cultivation of which medical science expects so much.]

Eyr, No. 3, 1835. *Christiania*.

*A new Diagnostic Sign of Pregnancy.* By Professor KLUGE, of Berlin.

DR. SOMMER, of Copenhagen, informs us, in the journal of which he is one of the editors, that Dr. Kluge, professor of midwifery in Berlin, considers as a *sure test of pregnancy a blueish tint of the vagina*, extending from the os externum to the os uteri. According to Dr. K., this discoloration commences in the fourth week of pregnancy, continues to increase to the period of delivery, and ceases with the lochia. The only condition considered as likely to vitiate the test is the existence of hemorrhoids in a very marked degree. Dr. Sommer convinced himself of the presence of this particular colour in pregnant women, under the direction of Professor Kluge.

[If the validity of this sign should be established, of which we take leave to doubt, its importance in certain cases must be admitted, when we consider the difficulty, not to say impossibility, of detecting pregnancy in its earliest period. It is at least evident from this, as from a thousand other indications, that the employment as well as the estimation of *physical signs* is daily increasing.]

*Journal for Medicin og Chirurgie. November, 1835.*



*Use of Ergot in inducing Abortion.* By Dr. WEIHE.

A WOMAN, aged thirty-six, pregnant with her sixth child, in the fourth month of her pregnancy was attacked with uterine hemorrhage. After this had continued most violently for three days, without any appearance of expulsion of the fœtus, and when the woman was apparently dying from loss of blood, Dr. Weihe, with the view of inducing more speedy miscarriage, ordered eight grains of ergot of rye to be given every half-hour. After the third powder was taken, labour-pains came on, and she had scarcely taken the fourth before the fœtus was expelled. The patient fainted, but soon recovered: the hemorrhage ceased immediately, and she gradually recovered, although she remained exceedingly weak for a long time.

*Bibliothek for Læger.* No. 2, (April,) 1836.

## MEDICAL STATISTICS.

*Statistical Researches on Calculous Diseases.* By Dr. CIVIALE.

[M. CIVIALE having laid before the Academy of Sciences the voluminous results of his statistical labours on these diseases, M. Double was appointed to make the report. From this, very little valuable matter can be gleaned, as the reporter has occupied himself chiefly in pointing out what has not been done, and in discussing the question of the applicability of the "numerical method" to the elucidation of disease. M. Civiale appears to have collected above five thousand cases, treated by the most celebrated European surgeons of the present day, and his statements are founded on this solid basis. From a discussion which took place at the Academy, it appears probable that M. Civiale has not examined these cases in all their bearings, which may be the reason of the barrenness of M. Double's report. We shall extract the few conclusions which are given.]

As regards *the age* most subject to calculous complaints, it appears that more than half the sufferers are below fourteen years of age. At the hospital at Lyons, seven or eight children are operated on to one adult. This, however, is not true in all localities. Whilst the fact is most convincing in Wurtemberg, in the mountains of Lorraine and Barrois, among the Alps on the confines of Italy, in some counties in England, &c., yet, on the other hand, in very hot and very cold countries, adults and the old are more liable to the disease. Children with calculi are everywhere almost exclusively found amongst the poor; whilst adult and old patients are met with equally in different classes of society. Children are almost always exempt from genito-urinary diseases, which so cruelly torment the calculous patients of other ages.

M. Civiale finds the opinion that calculous diseases are most frequent in some countries and districts to be unsupported by his facts. Many causes lead to this error; *e. g.* the attention being particularly directed at any given place to the disease brings many cases from a distance. From the number of operations performed by the celebrated lithotomist Raw, in the hospital at Amsterdam, it was believed that the stone was very common in Holland; but since his death they have diminished one-third. The frequency of the return of the disease after lithotomy is confirmed. This is particularly the case where there is at the same time chronic catarrhus vesicæ, or any other confirmed disease of the bladder or prostate. M. Civiale asserts that such diseases cease more quickly, and in a more marked manner, after lithotripsy than after lithotomy. The presence of the stone may produce two opposite states of the bladder: hypertrophy with diminution of capacity, or thinness of its coats with dilatation. Of 5,715 cases in which lithotomy had been employed by the first surgeons of Europe, there were 1,141 deaths, 4,478 complete cures, and 100 consecutive diseases. The mortality on the whole number for all ages was therefore a fifth; and it should be recollected that half these patients were under fifteen years, and at this age there is at least twice as great a chance of cure. On the other hand, in 257 cases of lithotripsy collected in M. Civiale's tables, there were only six deaths, or a mortality of one in forty-two

patients; and of the whole number there were only two or three individuals under fourteen years of age. As a further proof of the superiority of lithotripsy, M. Civiale states that, since its discovery, among many medical men who have been affected with stone, it would be difficult to find one who had not preferred lithotripsy to the old operation.

[This comparison of the average of the mortality of the two operations is probably as just as could be drawn from any available materials; but these are necessarily too defective to admit such sweeping conclusions as seem at first sight legitimate. Lithotripsy is a new operation, and consequently its supporters would publish every successful case, and would choose generally those cases only in which there was a fair prospect of success. On the other hand, except in hospitals, where accurate tables of operations and their results are kept, (and they are comparatively few,) the rare, difficult, and often fatal cases of lithotomy are those which, from offering the greatest interest and instruction, would frequently be alone published; and very desperate cases are constantly operated on by the old method, as a last resource. The disproportion also of the numbers of the two tables (5,715 with 257,) is another ground of suspicion as to the value of the comparison. We know of more than one surgeon who was successful in his first thirty or forty cases of lithotomy, but whose average was speedily reduced by a few subsequent cases which terminated fatally. It may be doubted also whether the *personal* preference which medical men give to lithotripsy is of much weight. The prospect at least of less immediate suffering, and an escape from the knife, are likely to be preponderating influences when a man is called on to decide for himself as to the particular operation which is to be performed on his own body; and neither of these reasons are the most important ones. The question, however, of the greatest practical value is not as to which operation is most fatal, but to what kind of cases lithotripsy is most suited, and under what circumstances lithotomy is indispensable. The solution of these points M. Civiale has not yet attempted.]

*Gazette Médicale de Paris*, No. 42, 17 Octobre, 1835.

#### *On Suicide in the Canton of Geneva.* By M. PREVOST.

[By the laws of the canton, each case of violent death is investigated by a police magistrate, and the documents are sent to the "procureur generale," and carefully preserved. M. Prevost has examined these documents, collected between 1825 and 1834 inclusively, with a view to investigating the causes of suicide, and of diminishing them, if possible. The following are the more important results.]

##### 1. Age.

Ages.	Number of Cases in 10 years.			Men.		Women.
From 50 to 60	..	34	..	25	..	9
20 to 30	..	30	..	22	..	8
60 to 70	..	19	..	10	..	9
30 to 40	..	18	..	15	..	3
40 to 50	..	15	..	13	..	2
70 to 80	..	9	..	6	..	3
10 to 20	..	5	..	3	..	2
80 to 90	..	3	..	1	..	2

From this table it appears that suicides are most frequent between 50 and 60 years of age. The age when the passions are the strongest (from 20 to 30) is, as might be expected, high in the scale; that of youth and old age low, from the young being strangers to the cares of life, and the old few in number when compared with the population.

##### 2. Sex, and State of Marriage or Celibacy.

There are more suicides among men than women, in the proportion of 95 to 38, or about three to one; and more unmarried than married, or in the state of widowhood, in the proportion of 70 to 63, or about seven to six. Notwithstanding this,

the female suicides are more numerous among the married and widows than among the unmarried, in the proportion of 21 to 17. But among men the proportions are reversed, that is, 42 to 53; so that, on the whole, suicides are more frequent among the unmarried than amongst those who are or have been married. This will not surprise those who know the energy, courage, and patience of women under misfortune; men more readily giving way to despair, and to vices consequent upon it. Men also have means of destruction, as fire-arms, more readily at hand.

### 3. Occupations.

The number of suicides are in proportion to the numbers of the individuals engaged in various trades, except among the agricultural population, where the proportion is very small. Thus, the agricultural population of the canton is 18,000, among whom, during ten years, there have been but twelve suicides; whereas, if they had been in the same proportion to the whole number as was found in the other occupations, they would have amounted to thirty-nine. Constant occupation, and hard yet healthy work, render them less sensible to the cares of life. There is also a somewhat larger proportion of suicides among the educated classes, who are engaged in literary pursuits or the higher branches of commerce.

### 4. Religion.

The relative proportion of Protestants to Catholics in the canton of Geneva is, according to the census of 1834, as 77 to 56. Thus,

Of 133 inhabitants, there are		Of 133 cases of suicide,	
Protestants.....	77	.. ..	107
Catholics.....	56	.. ..	26
	<hr/> 133		<hr/> 133

This result should attract the attention of those who are interested in the moral and religious education of Protestants.

### 5. Means of Destruction.

Drowning .....	55
Fire-arms .....	31
Strangulation.....	18
Voluntary falls .....	15
Cutting instruments .....	7
Poison .....	7
	<hr/> 133

In a small province with a lake and two rapid rivers, it is not surprising that drowning should be the most frequent mode of suicide; next to this is death by fire-arms, which is accounted for by all the men having fire-arms, as they are in the militia. Whilst the men have used fire-arms and cutting instruments, the women have almost alone had recourse to poisons and voluntary falls.

### 6. Seasons.

The seasons influence sensibly the number of suicides. There are more almost constantly in April.

Of 133 suicides, there were in

April .....	19	March .....	10
June.....	17	November .....	9
August.....	17	September ....	6
July .....	15	January .....	5
October .....	14	February .....	5
May.....	13	December .....	3

The spring appears to have an unfavorable effect, and during the great heats there are more suicides than during the cold weather. It is curious that many suicides

happened on the same day or week. Thus, on April 9th, 1830, there were two suicides, and several others on the previous and subsequent days; on the 20th May, 1830, there were two suicides; on the 28th and 29th of March, 1831, two; and the same on the 3d and 4th of July of the same year. On April 20, 1833, there were two; and, on July 5th, 1833, two others. Some atmospheric changes may account for this, though meteorological tables did not satisfactorily explain them.

#### 7. Presumed Motives.

Physical disease .....	34	Bad conduct. Drunkenness.....	10
Insanity .....	24	Fear of punishment. Remorse....	6
Losses of property .....	19	Disappointment in love .....	6
Domestic grief .....	15	Gambling .....	4
Melancholy without known cause ..	13	Mysticism .....	2

#### 8. Relation of Suicides to the Population and to the Deaths.

The number of suicides is, as to the whole number of deaths, as one to 90 $\frac{1}{2}$ , and to the whole population as one to 3,985; the mean population of the canton during the last ten years being 53,000.

In 1825.....	6 suicides.
1826.....	6 —
1827.....	9 —
1828.....	13 —
1829.....	13 —
1830.....	16 —
1831.....	18 —
1832.....	12 —
1833.....	24 —
1834.....	16 —

133

From this table it appears that the number of suicides has gradually increased from 6 as high as 24 in one year. The last year it decreased to 16; and it is fervently hoped that this deduction may be maintained, and that the increase may not be so frightfully rapid as it appears to have been. It must however be taken into account, that the population was, in 1822, 51,113, and, in 1834, 56,655. The police also are more active, and inquests are held more regularly.

(Extracted from the "Bibliothèque Universelle." Genève, Juin, 1835.)

*Annales d'Hygiène publique.* Janvier, 1836. No. 29.

#### The Cholera in Italy.

*Statistical Report of the Cholera in Italy, in the year 1835; containing the approximative Results, from its invasion to its cessation, in the Cities where it has chiefly prevailed.*

Places.	Total Population	Total Number attacked.	Total Deaths.	Proportion per cent.			Duration of the Epidemic.
				of the Population attacked	of Deaths in those attacked	Deaths to the whole Population.	
Nice . .	26,000	396	224	1 $\frac{1}{2}$	6 $\frac{1}{2}$	0 $\frac{2}{10}$	13 July—27 Sept.
Cuneo . .	18,000	1,121	425	6 $\frac{1}{2}$	38	2 $\frac{1}{2}$	25 July—6 Sept.
Genoa . .	80,000	4,259	2,151	6 $\frac{1}{2}$	50 $\frac{1}{2}$	2 $\frac{1}{2}$	1 August—13 Oct.
Leghorn .	66,000	2,031	1,146	3	58 $\frac{1}{2}$	1 $\frac{1}{2}$	6 August—13 Oct.

*Bullettino delle Scienze Mediche.* Ottobre, 1835.

*Vaccination in Austria.*

[THE following table shows, on a large scale, the state of vaccination in the Austrian dominions, and furnishes some results which cannot be obtained in this country, owing to the imperfect organization of our medical and statistical institutions.]

PROVINCES.	Number vaccinated.	No. in which vaccination succeeded.	No. of cases in which vaccination failed.	Number remaining unvaccinated.	Number affected with Smallpox.	
					Inoculated.	Not inocul.
1832.						
Dalmatia.....	9,266	9,139	134	604	8	28
Hungary .....	185,972	184,834	1,138	—	—	1,645
Venetian Territories	55,222	52,740	2,482	15,416	3,991	5,706
Austria on the Enns	19,143	18,023	1,120	20,748	—	1,683
1833.						
Austria on the Enns	17,690	17,095	695	18,559	177	6,289
Moravia and Silesia .	70,302	67,500	2,802	12,400	59	118
Styria .....	20,005	19,202	803	5,331	—	1,491
Illyria .....	17,119	—	—	3,964	718	2,430
Maritime Territories	14,432	14,260	172	2,538	27	133

From this table it appears that, of the total number of persons vaccinated, about one in forty-three failed to take the infection; that, of the total population, more than one-fifth remained unvaccinated; that the proportion of persons inoculated with smallpox to those vaccinated was as one to eighty-four; and that the number of cases of natural smallpox to the number of persons vaccinated was as one to twenty-two and a fraction.

*Medizinische Jahrbücher des Oesterr. Staates.* 1835.

*Revaccination in the Prussian Army in 1834.*

[A GENERAL revaccination of the military having been ordered in the year 1834, the following are the results, extracted from an official document addressed by the head of the military medical department, Von Wiebel, to the medical officers in the army, and dated Berlin, 23d June, 1835. Like all the medico-statistical documents of Prussia, it is important from its extreme accuracy and the extent of the authentic facts which it embraces.]

1. The number of men vaccinated was 44,454.

2. Of this number,

Had distinct marks of previous vaccination..	33,634	
Indistinct marks.....	7,134	
No marks .....	3,686	44,454

3. The present vaccination was

Regular in its course in .....	16,679	
Irregular.....	12,287	
Without any result.....	15,488	44,454

4. Of the number (15,488) in whom the vaccination entirely failed, 4,530 were revaccinated a second time; and, of these, 866 took the disease; while, in the remaining 3,664, no effect was produced.

5. The number of true pustules in the individuals who took the disease regularly was as follows :

From 1 to 5 in	6,763
— 6 to 10 in	5,028
— 11 to 20 in	4,088
— 21 to 30 in	800

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16,679 Total.

6. Of those who had been previously vaccinated, or on the present occasion were revaccinated and took the disease properly, the following were affected with some form of variolous or varioloid disease in the course of the year :

With varicella .....	46
With varioloid disease..	31
With true variola.....	2

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79

7. In the whole army, the number affected with varicella, varioloid disease, or true smallpox, in the year 1834, were however 619, including the 79 mentioned in the last paragraph; consequently, in 540 of these patients, the revaccination had been either irregular or had not succeeded, or had not been employed at all.

Of these 619 soldiers, 38 died of the true smallpox; of whom, 2 had been vaccinated with effect, 6 without effect, and 30 (nearly all raw recruits) not vaccinated at all.

[From the preceding statements, the medical director very properly urges the advantage of revaccination, and strongly recommends all medical officers to carry into effect once more in all those cases wherein the previous vaccination had been irregular in its course or had entirely failed; instructing them to take the lymph from young subjects, vaccinated for the first time.]

*Rust's Magazin*, Band. xlv. Heft i. 1835.

## CHEMISTRY, PHARMACY, &c.

*Detection of Sugar in the Blood in Diabetes, and on the best Mode of separating the same substance from the Urine.* By FELICE AMBROSIONI, of Milan.

[It is well known that until very lately the most distinguished British and foreign chemists have failed to detect the presence of sugar in the blood of diabetic patients. This, however, has been recently effected by the author of the memoir of which we shall give an extract, and also, we believe, by some other continental chemists. If this does not prove to be only an exception to the general rule,—and we confess we are sceptical on the point, on considering that such eminent men as Guendeville, Nicolas, Wollaston, Henry, Marcet, Prout, failed to detect any trace of sugar in their experiments,—the discovery will occasion a great change in our views respecting the pathology of diabetes. It will lead to the conclusion, that in diabetes, as in other diseases, the office of the kidneys is chiefly to act as filters to the blood, by removing effete and unassimilated matters; also that the disorder does not reside in these organs, and consequently that our remedies must be directed to the improvement of the other functions. The following are Signor Ambrosioni's processes for detecting the saccharine principle in the blood and urine. It is proper to observe, that the discovery was made only in a single case; and it may not be uninteresting to mention that the case was cured by the use of creosote.]

### 1. Analysis of the Blood.

To obtain sugar from the blood, one pound of the serum and crassamentum from the same patient was diluted with water boiled and filtered. The filtered liquor was deprived of its colour by subacetate of lead, and a stream of sulphuretted hydrogen threw down from the mixture a black pultaceous mass, which diluted with distilled water, and filtered, produced a dark brown liquor, which was boiled in a

solution of albumen. As the albumen coagulated, the liquor separated into a clear colourless fluid and a dark flocculent and insoluble matter. The fluid portion, when boiled slowly, threw up a syrupy scum, and assumed all the characters of a perfect syrup. Left at rest for a few weeks, small colourless crystals were formed in it of a prismatic form, with a rhomboidal base, modified at the angles and apices, in every respect resembling a perfect sugar. The uncrystallized syrup, at about 80° F., mixed with a little yeast, exhibited a decided vinous fermentation. The quantity of syrup obtained from one pound of blood was about an ounce, the crystals weighed two grains. [Since the foregoing was transcribed for the press, a case has been published in the Medical Gazette, No. 431, in which sugar was detected in the blood by Mr. Maitland.]

## II. Analysis of the Urine.

The process employed in the reduction of sugar from the urine is as follows: The urine, which was pale, void of urea, and contained few salts, was treated with subacetate of lead, the oxyde of which was precipitated, combined with the animal and colouring matters, and a few salts. Sulphuretted hydrogen, passed through the filtered liquor, removed the excess of the salts of lead, which formed a brown precipitate, the liquor remaining clear, and consisting of water, sugar, and a minute portion of animal matter. Evaporated in a water bath to a syrup, and left for some weeks at the ordinary temperature, a white efflorescence beginning at the sides of the vessel, gradually extends over the whole, and converts it into a solid, whitish, amorphous mass, which, when broken, exhibits indistinct traces of crystallization; and, when washed with pure alcohol, is freed from the animal and colouring matters, and remains undissolved in the form of a pure white sugar.—*Annali Universali di Medicina. Aprile, 1835.*

## On the Effects of Boiling Meat and Vegetables. By M. CHEVREUL.

[In a report read before the Academy of Sciences, by M. Chevreul, who was appointed with others to examine the nature of soup sold in Paris under the name of "bouillon de la Compagnie Hollandaise," the results of experiments on boiling food in different ways are introduced, which convey some important dietetic hints.]

If meat is boiled in distilled water in which 1,125 of its weight of common salt is dissolved, it will be more tender and have more taste, whilst the decoction will be equally more sapid and more odorous, than if the well-water of Paris, which contains sulphate and carbonate of lime, had been employed. The sulphate of lime exercises a singularly unfavorable influence on the tenderness and savour of the meat, and odour and savour of the broth. If, however, the distilled water is saturated with common salt, the meat becomes more hard, with a particular taste analogous to ham, and the broth less odorous and sapid.

The mode of boiling influences the results. Thus, two pieces of meat of equal size, &c. were chosen: one was put in an earthen pot with a given quantity of cold distilled water, and the temperature gradually raised to ebullition, and maintained at the boiling point for five hours; the other was plunged into the same quantity of boiling water, and boiled also for five hours. The taste of the broth made from the meat placed in boiling water was unanimously pronounced, by ten persons, to be inferior to that made from the meat placed first in cold water; and, on concentrating and analyzing the former, it furnished only 10,100 organic matter and 2,1000 fixed salts; whilst the latter furnished 13,1000 organic matter, and 3,1000 fixed salts. On the other hand, 500 grains of meat boiled gradually was reduced to 326 grains, and to 3 gr. 25 of fat which could be separated; whilst 500 grains of the meat plunged at once into the boiling water was only diminished to 375 grains, containing almost all the fat. This is owing to the albumen and fibrine of the outer surface being hardened immediately by the sudden heat before they could be dissolved, and thus forming a sort of coating which opposed the free penetration of the water into the interior of the meat. During the ordinary boiling of meat, the albumen is dissolved before the temperature of the water is elevated to that degree at which the albumen coagulates; when the temperature is

sufficiently elevated, all the albumen is cooked, and is reduced partly to an insoluble solid, coloured lightly with hematosine which forms the scum, and partly to a soluble portion which remains dissolved in the water. The cellular tissue, which penetrates all parts of the meat, and particularly that which envelopes the fat, together with the tendinous tissue, is changed into two parts: one, which consists of gelatin, dissolves; the other remains in a solid state, more or less soft and swollen, and is commonly called the nerve. The muscular tissue, essentially composed of fibrine, becomes at first hard, like the albumen, but none of it dissolves; so that, if albumen, gelatinous tissue, stearine, and oleine, were not interposed between its parietes, the muscular tissue would be too stringy to be thought highly of as nutriment. The fat, formed of oleine and stearine, is not changed; one part remains in the meat, and another swims on the broth. The principle which imparts the predominant odour to the meat, the sulphurous product, the amber-smelling principle, (an unnamed acid, more or less analogous to hircic and butyric acids,) the volatile acid, analogous to acetic acid; all of which are obtained by the distillation of meat, appear to be formed by a new state of equilibrium, which is established between the elements of one or more principles immediately soluble in water.

The changes produced in boiling some vegetables are worth attending to. From the red cabbage, and probably all its varieties, when boiled in distilled water, is disengaged an odorous principle proper to many Cruciferae, which blackens paper impregnated with acetate of lead, from its containing sulphur; and some ammonia. The turnip and parsnip give out a similar principle, but containing less sulphur. The burnt onion exhales a volatile oil, containing more sulphur than the volatile principle of the cabbage, and some ammonia. From the carrot is disengaged a strongly odoriferous principle, accompanied by ammonia, but not acting on acetate of lead. The same vegetables, boiled in distilled water, containing 1,125 of its weight of common salt, exhale the same products, but the odour of the carrot smells sweeter, and that of the Cruciferae stronger. The pure water in which these vegetables have been boiled retains in solution a sensible quantity of the odoriferous principles of the carrot, onion, and parsnip, as well as the colouring matter, &c. The salted decoction smelled more strongly than the other; its taste was also stronger, (not taking into account the taste given by the salt,) and yet it contained less extractive matters, in the proportion of 1 to 1.4. It may therefore be concluded, that the salt develops and increases the sapidity of the matter extracted. The vegetables themselves are much more tender and sapid when boiled in water thus salted than in pure water. The onion, when boiled in pure water, is inodorous and insipid; when boiled in salted water, it has a sweet taste and marked aroma. Water, therefore, containing 1,125 of its weight of muriate of soda is more proper than pure water for boiling these vegetables: first, because the addition of salt renders the water less capable of taking up the soluble matters; and, secondly, because it gives the vegetables more tenderness, odour, and taste.

*Journal de Pharmacie, &c. Mai, 1835.*

#### *Simplified Method of obtaining Creosote.* By ANT. GIORDANO.

THIS substance, obtained by the new process, has exactly the same properties as that discovered by Reichenbach. The following is the mode of procuring it: distil wood-tar from the willow, at an elevated temperature from a tinned copper retort, until the residue has the consistence of a soft pitch. Re-distil the liquor passed over till its residue resembles the former. The liquor neutralized by subcarbonate of potass or lime-water is redistilled till all the oil of creosote has passed over. The oil is dissolved in caustic potass, from which, after simmering a little in a porcelain vessel, and cooling it, the Eupione which floats is easily separated. The same operation is repeated with the Eupione, to remove all the oil that is united to it. The saponaceous liquor, treated with diluted sulphuric acid, is distilled into water, from which the creosote is separated, and the water saturated with creosote is kept for external use, or redistilled for a concentrated acetic acid of a pungent and most agreeable odour.—*Annali di Medicina.* Aprile, 1835.



## TOXICOLOGY.

*Experiments on the Action of Oxalic Acid.* By J. W. ARNOLD.

THESE experiments were performed on dogs, cats, birds, and (chiefly) on rabbits: in the latter, the acid does not produce vomiting, and consequently it is unnecessary to tie the œsophagus. The poison was introduced into the stomach by pouring it slowly into a horn funnel attached to the outer end of an elastic tube passed down the gullet,—a mode of proceeding which makes it unnecessary to confine the animal.

The following are the general conclusions drawn from the experiments made with acid prepared and administered under various circumstances.

1. Oxalic acid is an active poison, and when given in large doses usually proves quickly fatal.
2. Its poisonous effects are uniform, and independent of extraneous admixtures, the mode of preparation, &c.
3. Its immediate effect on the nervous system is stimulant. This primary excitement is more or less rapidly succeeded by diminished vigour of the nervous functions.
4. The effect upon the heart is of the same kind, and dependent upon that produced on the nervous system; it occurs very speedily,—by a very transient state of extraordinary excitement being succeeded by diminution and ultimately by cessation of the heart's action. Similar observations are applicable to the respiratory organs.
5. The blood is peculiarly affected by oxalic acid. After large and speedily fatal doses it is fluid, uncoagulable; which is not the case after smaller and less rapidly destructive doses. This action cannot be ascribed to a chemical solution, as is sufficiently proved by its succeeding only to a quick, almost sudden death from the poison. Further, the coagulum of blood macerated at an elevated temperature, for a month together, in a solution of the acid, is not affected in this manner. It may consequently be assumed that the blood is thus affected by the acid as a result of the action of the latter on the nervous system; a supposition that will not be rejected by those physiologists, at least, who consider the blood as capable of being immediately influenced by the nervous system. The great accumulation of the blood in the venous portions of the heart and vascular system is to be explained by the impaired state of respiration and circulation. Like other acids, as Stevens and Hartwig have shewn, the oxalic renders the colour of the blood dark.
6. As regards the action on the alimentary canal, it operates as a local irritant, causing inflammation and extravasation of blood,—effects which are less obvious in proportion to the rapidity with which death ensues. Black points and patches occur on the mucous surface in consequence of the chemical action on the effused blood. The solution of the mucous membrane appears also to depend on chemical causes, inasmuch as it is always more decided in proportion to the interval which elapses between death and the time of examination.
7. The best means of counteracting the operation of the poison are those which tend to its evacuation; among which, emetics, however, are the less to be recommended, as the vomiting produced by the poison itself has little efficacy in preventing its injurious consequences. The stomach-pump is the most certain, if it can be used early enough. The employment of such bases as unite to form soluble salts with the acid, is of no service, as such salts are themselves poisonous. Magnesia and lime, on the contrary, deserve attention, as their combinations with the acid are insoluble. Stimulants, such as alcohol and camphor, have been proposed to counteract the depressing effects, particularly on the nervous system: but the rapidity of a fatal termination from large doses of the poison usually renders all aid useless.
8. Lastly, these experiments prove, what had been already rendered probable by observations on the human subject in health and disease, that neither the dilatation nor contraction of the pupil is to be considered as a simply passive condition.

*Tiedemann's Zeitschrift für Physiologie.* Vol. V. 1835.

## PART FOURTH.

**Medical Intelligence.**

ON

## THE PRESENT STATE OF MEDICINE IN DENMARK,

By C. OTTO, M.D., Professor of Medicine in the University of Copenhagen.

## FIRST REPORT.

## ON THE MEDICAL INSTITUTIONS AND THE MEDICAL PROFESSION.

THERE are two public establishments for medical and surgical instruction in Denmark; the one the *Medical Faculty* at the university, the other the *College of Surgery*.

## A. THE MEDICAL INSTITUTION AT THE UNIVERSITY.

Denmark possesses two universities; one for the German provinces, at Kiel in Holstein; another for the Danish provinces in Copenhagen, on the Island of Zealand. The university of Kiel is, in almost all respects as to plan, the period of study, &c. like those in Germany; but that of Copenhagen, although in the beginning principally modelled after its sisters in Germany, differs at present in many respects from them.

## I. THE UNIVERSITY OF COPENHAGEN.

This was founded in the year 1479. The number of the professors, who are divided into the four usual Faculties, amounts at present to thirty-eight; but there are, besides these, one or two private teachers in every one of the Faculties. Some (the oldest) of the Professors are *Ordinary*, others (the younger) *Extraordinary*. The Ordinary Professors have a higher rank, have a seat in the *Consistorium* (the academical senate,) and a better salary. Every year a new rector of the University is chosen, and out of every faculty alternately, but only from among the ordinary professors. The rector has during his office a very high rank, is addressed "Your Magnificency," and gets a salary of about four hundred Danish dollars. The income granted to the professors is partly derived from domains and farms given to the University at its foundation, partly from rents of churches, and partly from royal and private bequests.

The buildings of the university were for the most part burnt in the bombardment by the English in 1807, and were not rebuilt until the last year. They are now completed with a degree of taste and magnificence far surpassing the old; and the initiation of the restored institution is to take place this year, at the Jubilee of the great reformation of the church, which was introduced into Denmark in the year 1536. Besides the proper buildings of the university, there are four houses (formerly they were eleven, but seven were burnt in the year 1807,) in which four of the eldest professors with their families reside free of expence. The university also possesses funds derived from considerable legacies and stipends, and which are destined for the support and benefit of the students, for the enlargement of the library, for defraying the travelling expenses of promising candidates, &c.

Amongst these are the following: 1. The *Community* and *Regents*; the first is a weekly stipend, and the second is a free lodging for one hundred students at the *College of Regents*, a large edifice, founded by King Christian the Fourth. 2. The *foundation of the College of Walkendorff*, the oldest in the records of

Denmark, having been instituted in 1595, by C. Walkendorff, steward of the Empire, for the free residence of sixteen students. 3. *Borch's College*, called also "*Collegium Medicum*," built and endowed by the learned C. Borch, for the support of sixteen students. 4. *Elersen's College*, founded and endowed in the year 1689, by Jörgen Elersen, counsellor of state, also for the support of sixteen students. Independently of these foundations, many bequests have been granted to the university, the interest of which is appropriated to the support of indigent students and to the general extension of literature.

In order to authorize a student to be matriculated at the university, and to get admittance to the lectures, a public examination must be gone through: this is held once annually (in October,) and is called "*examen artium*." At this the candidate, recommended by the rector of a preliminary school or by a private teacher, is examined publicly, both by means of written exercises and *visa voce* in every thing, relating to "*humaniora*," viz. Latin, Greek, history, geography, mathematics, religion, the living languages, &c. The examinations are conducted by the professors in the Philosophical Faculty. It is not allowed to any student to undergo this examination before the age of seventeen; or, at least, a dispensation from this rule can only be granted by a special permission of the *Royal Board of the University*, which will be noticed hereafter. The examination is one of the most impartial and at the same time the most rigorous; and no one who is deficient in the knowledge of the several branches of classical and literary education can obtain a character, (there are three,) which will enable him to procure "*testimonium civis academici*;" in other words, which will gain him admittance to the university, and confer on him the name of "student;" a name, which in Denmark is more respectable than anywhere else. Matriculation without this "*examen artium*" is only allowable to those who, after having been matriculated at some other university, intend to continue their studies here or to take the degree of doctor.

As a stimulus to diligence and literary labours, eight prize-essays are annually proposed in eight different branches (theology, law, medicine, philosophy, mathematics, philology, history, and aesthetics), to which only students and candidates without any public office are allowed to aspire. The prize is a golden medal (on one side of which is the figure of Minerva, and the other a wreath of laurel, with the legend—"Studio et Ingenio,") or the sum of 5*l*.

The number of students at the university of Copenhagen has been increasing for many years; and, considering that these consist of natives only, the fact proves a laudable wish of the Danes in general to give their children a literary education. It is even very common for the sons of tradesmen to be brought up at the university. One of the causes which contribute to keep up the number of students is the comparatively small sum of money required for matriculation at the university (sixteen dollars, or 1*l*. 12*s*.) In order to prove the increasing number of students, I subjoin the following table, by which it will be seen that, even after the year 1811, when Norway got its own university by the bounty of the present king, the number did not diminish very much, and has since been increasing considerably.

Years.	Students.	Years.	Students.	Years.	Students.
1808 . . .	90	1813 . . .	84	1818 . . .	111
1809 . . .	83	1814 . . .	107	1819 . . .	102
1810 . . .	83	1815 . . .	98	1820 . . .	139
1811 . . .	183	1816 . . .	86	1821 . . .	129
1812 . . .	102	1817 . . .	116	1822 . . .	153

&c. &c. &c. At present the number of students is from 700 to 800.

But whilst there was so considerable a number of students at the university, the proportion of medical students was small, being not more than one or two in the hundred. The chief reasons of this were undoubtedly the greater expenses which medical study involves, and the few public offices in medicine compared with those in law and in theology. But in later years the number of medical

students has increased considerably, so that there are now often ten or twelve in every hundred who are matriculated. The natural consequence of this great increase has been an overwhelming number of practitioners, who, however clever and active, are not able to get any public employment, and, consequently, only with difficulty and after long struggles are enabled to earn a livelihood. Nevertheless, they continue to form part of a class the most respectable in morals and the most liberal in principles.

## II. THE MEDICAL FACULTY.

In the medical faculty at the university of Copenhagen there are three ordinary and two extraordinary professors, who are appointed by the Royal Board of the University, according to a recommendation of the Faculty, but which choice must be approved of by the king. They all get an annual salary; and from among the ordinary professors there is every year elected in rotation a Dean, who superintends the affairs at the Faculty. Besides these five professors, there may be an unlimited number of private teachers or lecturers, yet not without having taken previously the degree of doctor at the university; otherwise, a special permission is to be obtained. There are at present only two such private teachers, so that the number of lecturers at the Danish Medical Faculty does not amount to more than seven. This is a number which certainly is not at all adequate to the teaching of the numerous branches of medicine; and, accordingly, several branches, as for instance dietetics, military hygiene, semeiotics, the history of medicine, morbid anatomy, &c. are not at all taught. This is a deficiency in the Faculty, which we hope will soon be remedied by the union of the medical faculty with the other public establishment for medical and surgical education, of which I shall afterwards speak.

The following are the names of the teachers, and the subjects belonging to their respective chairs:

### *Ordinary Professors.*

- J. L. Saxtorph, . . . Surgery, Midwifery, the Diseases of Women and Children.  
D. J. Herholdt,\* . . . Human Physiology.  
C. L. Bang, . . . Pathology, Therapeutics, Clinical Medicine.

### *Extraordinary Professors.*

- D. F. Eschricht, . . . Anatomy and Human and Comparative Physiology.  
C. Otto, . . . Pharmacology and Forensic Medicine.

### *Private Lecturers.*

- E. Svitzer, . . . Anatomy and Dissections.  
S. T. A. W. Stein, . . . Anatomy.

In the Philosophical Faculty of the university are given lectures on the collateral branches of medicine, botany, chemistry, zoology, mineralogy, &c.

It is of course here, as in other universities, that the professors are not restricted to give lectures only in those branches to which they are appointed, but may lecture upon any other they choose. This, nevertheless, very seldom happens, and it will at once be seen on what unequal terms the different branches of medicine stand at the Danish university. Anatomy has three lecturers, physiology, two; while semeiotics, morbid anatomy, mental diseases, &c. have none at all. The same is the case with some other branches of therapeutics, as for instance, diseases of the eyes, of the ears, of the teeth, &c.; an anomaly which also will find a remedy in the above-mentioned union of the two establishments for medical education. Another defect in the Medical Faculty at the university is the very small salary which the five professors receive for their labours: although they lecture almost every day during eight months of the year, the ordinary professors do not receive annually more than 1000 Danish dollars (100*l.*) and the extraordinary ones only 800 (80*l.*) The natural consequence of this is, that the medical professors, as they do not get one farthing from the students,

\* Since dead.

the lectures being all public and gratuitous, in order to obtain a livelihood, are obliged to endeavour to procure some additional office, and also to enter into private practice; the consequence of which is the impossibility of their paying that exclusive attention to their professorships which these require. Yet it is exactly on this false principle, that the medical professors will be able to increase their income by practice, that the Royal Board of the university is acting in appointing a less salary to them for their labours at the university than to the professors of the other faculties; a principle which certainly is to be blamed in the severest terms, inasmuch as the salary should be sufficient to enable the professors to do without practice or any other offices, so as to devote themselves entirely to the duties of their chairs. The professors may certainly, besides their public lectures, give private ones, i. e. such as the students must pay for; the sum paid for such private lectures is only five dollars (2s. 6d.) for each [course?] and even this small sum the medical student is so unaccustomed and so disinclined to pay, that he very rarely attends such lectures. And truly, for this reason, the professor is even ashamed to ask his fee of the few who do attend. The same principle operates also as a cause of the impossibility of the professors occupying themselves with literary labours: for who that is forced to spend the whole day in the labours of an active practice is able to devote the few remaining leisure hours to literary studies? or who that has two offices to attend to (and all the professors of the Medical Faculty have more than one office,) can be expected to have much time left for any scientific occupations, except such as are involved in the discharge of the duties belonging to those offices?

Before he can undergo his examination at the Medical Faculty of the University, the medical student must have gone through the following preliminary trials:—He must be matriculated as student at the university, i. e. he must have taken his examination at the "*examen artium*." 2. He must furthermore have undergone the *philosophical examination* (*examen philosophicum*), which commonly takes place in the course of a year after the "*examen artium*," and is divided into two parts, at the first of which (*examen philologicum*) the candidate is again examined in Greek, Latin, history, mathematics, archaeology, and natural history; and at the second (*examen philosophicum proprie sic dictum*), in physics, astronomy, and the several branches of philosophy (logic, morals, metaphysics, &c.) The object of these preliminary examinations is to give the examiners a proof of the progress of the student in his literary career, and to oblige him to imbibe a knowledge of the natural sciences, without which he never will become a true, learned, and scientific physician. After these two examinations, the student may apply himself to the study of medicine; and when he requests to be examined at the "*examen medicum*," he must, 3, in addition to the foregoing, produce certificates of having attended the several lectures of the Professors of the Faculty, and of having visited the hospitals.

There is no period fixed for the study of medicine, as at the Austrian and many other universities; neither are certain lectures appointed to be attended the first, the second, the third year, and so on. Such supererogatory interference certainly only tends to stifle genius, and to make diligence and industry of less avail than they ought to be. It is left entirely to the candidate in how many or in how few years he shall finish his studies, but the usual term is four or five years.

When the candidate is admitted to the "*examen medicum rigorosum*" by the Medical Faculty, he must undergo the following trials of his knowledge:—1. He must examine a patient, newly taken in at the Fredrik's-Hospital (the first in town), explain the symptoms of the case, assign it a name, tell the seat of the disease and its remedies, prescribe the indicated medicine and the diet, &c. 2. He must give, in Latin, written answers to a physiological and a therapeutical question. 3. He must make two anatomical dissections in the dissecting room. 4. He must perform two surgical operations, explain their nature, the different modes of proceeding, the possible consequences, &c. 5. Finally, he is examined

*viva voce* in all the different branches of medicine by all the Professors of the Faculty. The written answers to the questions are drawn up in the presence of an inspector, and no other help but a Latin dictionary is allowed. All the other examinations are public, and they have been hitherto in the Latin language, the explanations of the surgical operations excepted. The oral examination lasts a whole day for each candidate, every professor examining during the space of an hour or an hour and a half.

When the examination of the day is finished, the candidate and all the auditors leave the room, and the professors hold a council, in which they determine by vote the general character which is to be given to the candidate. There are three such general characters: *Laudabilis*, *haud illaudabilis*, and *Non contemnendus*. The last named is seldom given, the candidate entitled to no other being commonly rejected; but it is proper to state, that the examination of the Medical Faculty is conducted in the most liberal spirit, and that greater notice is taken of the general knowledge and ability of the candidate than of refined subtleties and smaller deficiencies. When the professors have agreed upon the general character, the candidate is called in, acquainted with the result, and an oath in the following terms is taken from him: "*Gratulamur tibi de exhibito eruditionis specimine et speramus te eandem optimo modo in emolumentum societatis et proximi adhibiturum atque magis magisque aucturum nec non leges, quæ medicum et chirurgum obstringunt, tibi cognitæ redditurum et impleturum, in cujus promissi sanctam observantiam te oportet dextrum porrigere.*" The testimony of having undergone the "*examen medicum*" is this: "*anno [ ] die [ ] speciminibus scriptis et tentaminibus scriptis rite absolutis N. N. philosophiæ et philologiæ in alma universitate Havniensi Candidatus et Medicinæ Studiosus examini medico chirurgico practico riguroso se subiecit indeque (Laudabilis or Haud illaudabilis,) discessit.*"

The sum which the candidate has to pay for admission to the examination is very small, not amounting to more than twenty dollars (24.), of which the Dean receives five, the eldest professor five, and the youngest (as Secretary of the Faculty,) two dollars. Examinations take place twice in the year, in the spring and in the autumn.

When the candidate has gone through the *examen*, he is immediately allowed to practise medicine and surgery wherever he pleases in the Danish States, the degree of doctor not being necessary to practise. The degree of M.D. is in Denmark but a literary honour, which only is required when any one aspires to a professorship at the university. It will from this at once be seen, how much the arrangements differ in this respect from those of the universities in Germany, and particularly in Prussia. If a foreigner wishes to practise as physician or surgeon in the Danish States, he must, besides being previously matriculated at another university, undergo a preliminary examination in the same branches of classical education that are required at the "*examen artium*" and "*examen philosophicum*," and not until then is he admitted to the "*examen medicum rigorosum*."

### III. THE DEGREE OF DOCTOR OF MEDICINE.

Whoever wishes to take the degree of M.D. at the University of Copenhagen, must necessarily, 1. be matriculated at the university and have taken the "*examen philosophicum*;" 2. submitted to the "*examen medicum*" and have obtained the first character (*laudabilis*); and 3. must be "*Licentiate of Medicine*." In order to become licentiate, he must write a medical dissertation in the Latin language, and deliver it to the Medical Faculty to be examined; when it is admitted to be well and scientifically written, the candidate must get it printed, together with the sentence passed upon it by the Faculty, and then defend it publicly, in the Latin language, in the hall of the University, against two professors of the Faculty appointed for this purpose, ("*opponentes ordinarii*,") and against any one of the auditory who may choose to question it. If the candidate defends his dissertation in an able manner, the Faculty announces

it to the Royal Board of the University, which, with the King's permission, assigns the name of "Licentiatu<sup>s</sup> Medicinæ" to him. Only those who are in public offices, or have acquired a celebrated name, are allowed to take the degree of doctor before being "Licentiati;" but, if that is the case, the degree of doctor is obtained by writing once more a Latin dissertation, and doing all the above-mentioned things over again, defending the essay publicly, &c.

It is to be remarked that much stress is laid upon the taking of the degree of licentiate and doctor, and that nobody is allowed to receive them without having written a really good essay, and given proofs of solid knowledge and a true scientific spirit in the composition and defence of it. The name of a Danish Doctor of Medicine is consequently held in much greater respect than that of a German; and many of the candidates have by their inaugural essays really contributed to the progress of science. At the public defence of the dissertations, which usually lasts a whole day, the candidate is allowed an assistant ("Respondens," as he is called), who commonly is younger than the candidate, and whose name appears on the title-page of the printed dissertation.

The sum which is paid for admittance to the degrees of licentiate and doctor is a small one; being for the first twenty-five dollars (25. 10s.); for the second, seventy dollars (70.) of which the Dean at the Faculty receives forty dollars (40.) The greatest expenses are incurred in the printing of the dissertations; about one hundred copies of which are distributed gratuitously to all the professors of the university, to the public libraries, &c.

The degree of doctor is held in such high esteem, that a special academical meeting is appointed for the occasion, and previously to the ceremony a program is issued, written by the Professor of the Latin language at the university, and accompanied by a note of the life of the candidate. At the inauguration, the Dean of the Medical Faculty ascends the chair, and, after a Latin speech, composed for the occasion, upon one or other fitting medical subject, he confers the degree, making use of the old symbols: the *book*, the *hat*, and the *kiss*. After this, the new-made doctor ascends the rostrum, and in a Latin speech returns thanks for the honour conferred on him.

Every one bearing the degree of doctor is entitled as well to aspire to a professorship as to give public or private lectures; and, if he makes application for a public appointment, he is, *cæteris paribus*, preferred to other candidates. He has also a certain rank in the state, for which however he must pay a certain annual tax. These are all the advantages of being a doctor of medicine in Denmark. The real value of the degree is only known to literary persons acquainted with the signification of the word and the thing; for it is the custom in Denmark, or elsewhere, to call every practitioner "doctor." As has been already stated, no one can get appointed to any of the public or royal medical offices in Denmark except those who have undergone the examination of the Medical Faculty at the university, although the degree of doctor is not required. But these offices are few in number, not amounting in all to more than twenty-three. They are as follows: five professors at the university; eleven county physicians; one physician of the Public Lunatic Asylum; two physicians of the court, (whose duty comprehends attendance on all the inferior officers and servants;) one physician of the poor in Aalborg in Jutland; one county physician in Iceland; one in the West Indies; one physician of the King. The prosecutor at the university, and the physician at the second hospital (the general) in Copenhagen, have both other surgical offices. The professor of midwifery and surgery at the university, J. S. Saxtorph, is also physician of the lying-in hospital; the professor of physiology, J. D. Herholdt, is the first surgeon of the navy; the professor of therapeutics, C. Bang, is physician of the first hospital (Fredrik's) in Copenhagen; the professor of anatomy, F. D. Eschricht, is physician of the Foundling-Hospital; and the Professor of Pharmacology and Forensic Medicine, the writer of this, is physician of the public Penitentiary. The first and the last offices are not always united with the professorships, but

the others are always so. Of medical officers not royal there are three physicians of reserve and eight assistants (called candidates) at the hospital.

#### IV. SCIENTIFIC ESTABLISHMENTS.

1. *The Dissecting Room and the Anatomico-Pathological Museum.* The last mentioned is a very valuable collection of anatomical, pathological, and zootomical preparations, and contains about 1400 species. For the support of this establishment, 10,000 dollars (1000*l.*) are set apart, which are a portion of 294,000 dollars (29,000*l.*), that were left as a legacy to public establishments by a rich Jewish merchant, Amsel Meyer. Another Anatomico-pathological Museum is at the College of Surgeons; and a third at the Veterinary School.

2. *The Royal Museum of Natural History.* This was founded in the year 1796, by the union of several minor museums, and divided into two classes—zoology and mineralogy. The first consists of a collection of European birds, presented to the museum by Captain Wöldicke; a collection of African birds, presented by Mr. Hancke, Danish consul at the Cape of Good Hope; of birds from South America, &c.; and a collection of insects from the most remote period, described by the celebrated Fabricius in his work on insects, fishes, reptiles, &c. The second collection (of minerals) is extremely valuable: the minerals are from Iceland, Feroe, Greenland, Hungary, Austria, England, &c. The museum is open to the public twice in the week.

3. *The Museum of Natural History at the University.* This contains many zoophytes, insects, birds, &c., but more particularly minerals, which are used for the illustration of the lectures on mineralogy.

Besides these public museums of natural history, there are several private ones; as, for instance, one that belongs to the hereditary Prince Christian Frederik; one belonging to the apothecary Becker, &c.; but what deserves to be particularly mentioned here is a large collection of all sorts of animals belonging to a private "*Society for Promoting the Knowledge of Natural History*," which has been founded only three years, but consists of a very great number of members. The museum is open every Sunday to the members of the society and their families; and once in the year, during a fortnight, to the public. On every other Sunday in the winter a popular lecture is given alternately by Professor Eschricht at the university; and Schouw, professor of botany, upon some subject in natural history.

Another private society, which also has been founded lately, is that "*for the Promotion of the Natural Sciences*," which owes its origin to the celebrated Oersted, the greatest ornament of the university. This society, which has done much for the natural sciences in Denmark, has an excellent museum and maintains lecturers on the natural sciences in all the Danish provinces. Every other Sunday in winter popular lectures are given to a large audience of members by Oersted or by Forchhammer, professor of mineralogy at the university, and a celebrated name in chemistry.

The writer of this Report possesses a good Phrenological Museum, consisting of natural skulls and casts, the last for the most part from Edinburgh.

4. *The Collection of Philosophical Instruments.* This belongs to the university, and is very rich and valuable: it is under the superintendence of Oersted. The veterinary college has also a small collection of instruments.

5. *The Botanical Garden.* This was founded in the year 1778, and differs in this respect from most other botanical gardens that it is situated in the middle of the town behind the palace of Charlottenborg, (the royal academy of arts.) Although it belongs to the university, it is principally supported by the king; and is undoubtedly one of the most extensive botanical gardens of Europe. The number of plants amounts to 9000, and from four to five thousand different seeds are annually sown. The garden is daily open to every student from eight to twelve, and from two to seven o'clock. To the garden belongs an excellent library, consisting of a rich store of botanical books, plants, herbaria, &c. The manuscripts, and a Herbarium of more than 20,000 species of the late celebrated



Vahl, are the treasures of the establishment. The Professor of Botany at the university is inspector of the garden: the present is the celebrated T. W. Horneman, who has published a complete catalogue of the plants of the garden, accompanied with a botanical description, entitled, "*Hortus regius Botanicus Hafniensis*," in two volumes, and also a very valuable systematical description of all the plants of Denmark ("*Plantelære*," 1821.) The celebrated botanical work with plates, entitled "*Flora Danica*," also continues to be published under his inspection.

6. *Public Libraries.* Of these there are several; the following are the principal:

a. *The Royal Library.* This was founded by King Frederick the Third, in 1665, and is supposed to be one of the first royal libraries in Europe, containing about 400,000 volumes. It consists of nine magnificent rooms. The largest of them is 260 feet in length, and contains every work of antiquity; around it is a beautiful gallery appropriated for the same use. An isolated part of it is the *Northern Library*, which has been arranged since the year 1781, and contains the whole literature of the Danish States, and very much of the Swedish. Few public libraries have a more extensive collection of manuscripts, atlases, and engravings. The engravings are from the most ancient period, and are divided into three classes. The eldest collection consists of 47,228 engravings, bound in fifty-five large volumes, which were collected in the seventeenth century, under the reign of King Christian the Fifth, and are of the greatest antiquity. A later collection, formerly belonging to Mr. Wasserachleben, Privy Counsellor to his Majesty, consists of 29,016 engravings, and is bound in 212 large volumes. According to a law passed in 1821, two copies of every book printed in the Danish States are to be delivered to the library. It is open every work-day from eleven to one o'clock, and in the reading room every one may, during these hours, read and make extracts from books; and they are also most liberally lent to any one who either is known, or procures a written security from some one who is so.

b. *The Library of the University.* This is arranged in a spacious saloon over Trinity Church, and contains about 100,000 volumes. The manuscripts, presented to this library by Arne Magnussen, are also very numerous, and illustrate the antiquity, geography, history, and language of the northern nations. Independently of this extensive bequest of books, he left to the university a considerable legacy, the interest of which is appropriated to the extension of literature. The library is also much indebted to Rasts, the late celebrated linguist, and to Dr. Wallich, at Calcutta, for a fine collection of Oriental works, which are here deposited; it is indebted to the late Count Moltke, Minister of State, for a collection of works in natural history; and to the Counsellor of State, J. H. Schou, for a large collection of books belonging to the science of law. The voluminous manuscripts of Iceland are here deposited, and are very remarkable; but the greatest curiosity is one volume in Runic characters, which is the only book of this description in existence; it contains the most ancient laws of Denmark. The old seals and letters of Norway also deserve to be mentioned, and an ancient copy of the celebrated Edda. To this library also a copy of all Danish books must be delivered gratuitously. A reading-room is attached to the library, and is open daily, from ten to two o'clock; books are also lent from this library.

c. *The Classenian Library.* This consists of 30,000 volumes, and possesses, in particular, books in mathematics, natural history, economy, geography, travels, &c. Major-general J. F. Classen, and his brother P. H. Classen, privy-counsellor to his Danish Majesty, were founders of this library. Amongst the valuable collection of books is a superb edition of botanical paintings in seventy volumes, by J. T. Herner, and which was presented by the present king, when prince-royal of Denmark. The library has a reading-room, and is open to the public four days in the week, from eleven to two o'clock, and books are lent, as in the other libraries.

d. *The Classenian Library for the use of Medical Men.* This consists only of medical books, which already amount to four thousand, and are increasing considerably every year. It is supported by a bequest of the above-mentioned brothers Classen, and by pecuniary contributions from the members of "*the Classenian Society of Literature for Medical Men*;" among whom the books and journals that are bought circulate, before they are deposited in the library. It is open to all medical men one day in the week, from eleven to one, and books and journals are lent.

Besides these libraries, there is one at the Veterinary School, one at the Royal College of Surgeons, &c., besides many large private ones.

#### B. THE ROYAL COLLEGE OF SURGEONS, OR THE SURGICAL ACADEMY.

Surgery has, since the year 1736, had its own school in Copenhagen. It formerly was called "*Theatrum Anatomico-Chirurgicum*;" but, in the year 1785, the institution was considerably enlarged, and got the above name, together with a new magnificent building, which was opened in 1788. This college, more particularly in the beginning, has contributed much to the progress of surgery in Denmark. Before its institution, surgeons and barbers were one and the same thing, and, of course, no well-bred young man or of the more respectable classes devoted himself to surgery.

All surgical offices, military and civil, are now only filled with gentlemen who have studied and passed their examination at this college.

The college consists of three ordinary professors, one adjunct, two lecturers (one in chemistry, another in anatomy,) four teachers, (who are called "surgeons of reserve," and are always young men, very often such as have been examined not more than two or three years before at the college,) and one candidate teacher.

The following are the names of the lecturers, and the departments taught by them respectively:

##### *Ordinary Professors.*

- C. Fenger, (the surgeon of the king,) Surgery and Midwifery.  
C. Withusen, (now general-director of the college,) Anatomy and Diseases of the Eyes.

- A. Callisen, . . . . . Surgical Pathology and Therapeutics.

##### *Adjunct Professor.*

- J. C. J. H. Gundelach-Møller, Forensic Medicine and Clinical Surgery.

##### *The Lecturers.*

- G. Scharling, . . . . . Chemistry.  
C. L. F. Henck, . . . . . Anatomy.

##### *Surgeons of Reserve.*

- M. Diörup, . . . . . Materia Medica.  
J. F. C. E. Starck, . . . . . Botany.  
J. Rorby, . . . . . Special branches of Surgery and Pathology.  
J. Pape, . . . . . Special branches of Anatomy, and Therapeutics.

##### *Candidate Teacher.*

- J. E. Larsen . . . . . Special branches of Surgery.

All the lectures are public; no private ones are allowed.

It will be seen that there is abundant means provided for teaching anatomy at the college, as well as at the Medical Faculty of the University. Indeed, Copenhagen is one of the places where this branch of medical science may be studied with the greatest advantage, not only on account of the able teachers here, but also because the student has the greatest facility and best opportunity of dissecting, both at the Faculty and at the College. In both, the dissecting rooms are open every work-day, and dead bodies are to be got at an extremely small cost. From the hospitals the dead bodies of poor persons, who either die without any relations or with relations that do not care for them, are often to

be had for no more than two English shillings. The standard price at the Faculty for a body is four shillings. Both institutions are, according to law, alternately and gratuitously furnished with the dead bodies of the criminals who die in the different public penitentiaries.

The same defect already noticed respecting the lectures at the Medical Faculty is also observable at the College. There are no lectures given on physiology, dietetics, morbid anatomy, on the diseases of the teeth, of the ears, of the mind, &c.; and very often the most important branches of surgical and medical knowledge, as, for instance, semeiotics, are left to the junior teachers, who of course want the necessary practical experience; faults which, as already mentioned, would be remedied, if the College of Surgeons was united with the Medical Faculty.

In order to show how small the remuneration is which in Denmark is given for scientific labours, I must here also notice the salaries of the lecturers at the College. The three professors get no more than 660 dollars (60*l.*) annually; the adjunct professor fifty dollars (5*l.*); the lecturer in chemistry four hundred dollars (40*l.*); the four surgeons of reserve, 144 dollars (14*l.*)

To the College belong, 1. a very good *Anatomical and Pathological Museum*, which has an inspector, and is open to the student twice in the week in the summer, from twelve to two o'clock, at which time the inspector, Mr. Ibsen, explains the preparations; 2. a *Library of Surgical and Medical Books*, of which Professor Callisen is librarian; and, 3. a *Collection of Surgical Instruments*, which, however, is as yet very small.

To enable one to study and to be examined at the College of Surgeons, it is not necessary to be matriculated as "civis academicus" at the university, but the lectures are open to every one who pleases to attend them; and, when anybody wishes to be examined at the College, he petitions the professors, and delivers at the same time his *biography*, which indicates his native place, his age, parents, the school he has attended, his literary and medical education; and this must, of course, be accompanied by testimonials of having attended the lectures at the College, the hospital, and the Clinics.

The candidate, when admitted, must either present to the College an anatomical preparation made by his own hand, or, instead of this, pay ten dollars, (1*l.*); so that either nothing is paid in money or only this small sum. He must, in the first place, give written answers to a surgical, therapeutical, or medico-forensic question, in the Danish language; in the second place, he must make an anatomical dissection, (which commonly requires a whole day;); thirdly, he must examine a patient in the surgical clinic in Fredrick's Hospital; and, finally, he is examined, *viva voce*, in the Danish language, by the professors, the adjunct, and the lecturer in chemistry, during eight hours, which are distributed over three days. At the end of the examination on the third day, the candidate is called in, and is made acquainted with the particular character he has received; and, on being admitted, the following oath, in Danish, is taken by him: "After having publicly proved my medical and surgical knowledge, I do hereby promise and engage myself, with oath and hand, to the Board of the College of Surgeons, that I shall always endeavour, in my function as practitioner, to employ my art zealously for the benefit of the community and my fellow-creatures; that I will take equally scrupulous care of the poor and the opulent, without any personal regard; strive to enlarge my knowledge, and learn and comply with the laws and ordinances that belong to my profession."

There are six general *characters* given at the examination, a number which certainly is too great, although in fact they are reduced to three principal ones, as every character (even the lowest,) entitles the candidate to practise medicine as well as surgery everywhere in the Danish states; but, of public offices, they can only get such as belong to the surgical department: yet these surgical offices surpass in number by far the medical ones. The royal public surgical offices amount to sixty-two military and eighty-four civil; but, of surgical offices that are not royal and very subaltern, there are ninety-four in the army and seven in

the navy; besides an office for a surgeon of reserve at the second hospital in town, (the General Hospital,) for one at the Military High School, and offices for eight assistants ("surgical candidates") at the two hospitals. Nobody, who has only been examined at the College of Surgeons, is allowed to take the degree of doctor.

The number of students at the College was formerly from 130 to 150, but this number has also increased in later years, (now it amounts to 200, fifty of which number being without any academical education;) and, when it is considered that the surgical offices in Denmark are only filled by those who have been examined at the College; that these offices far surpass the medical ones in number; that the two examinations at the university (the "examen artium" and "examen philosophicum,") are not required at the College; that, furthermore, nothing, or (failing an anatomical preparation) only ten dollars (1*l.*), are paid by the surgical candidates, it certainly is not to be wondered at that many more get examined at the College than at the Medical Faculty, and that even the greater part of those who submit themselves to the examination of the Faculty previously go through the examination at the College, in order to be entitled to make application for surgical offices. The folly of having two institutions where the same branches of the art are taught, the same examinations made, (differing only so far that the Latin language is used at the one, the Danish at the other,) is evident; and, were it only on this account, a reformation of the whole medical and surgical instruction in Denmark is loudly called for.

#### C. THE MEDICAL PROFESSION IN DENMARK.

From what has been stated of the qualifications requisite for admission to the examinations at the Medical Faculty at the University, and at the College of Surgeons, and of the extent of knowledge required at both in all the different branches of medicine and surgery, it is evident that the state has done every thing in its power to secure the aid of able and enlightened men in an art upon which depend the health and life of its subjects. Every physician and surgeon in Denmark gets an education which qualifies him to maintain the dignity of his profession, as a worthy member of a class that is generally considered as one of the most respectable and most liberal. The Danish medical men are usually held in high esteem. We have seen how much the doctor of medicine deserves respect from his scientific acquirements; and Danish physicians and surgeons are so honoured abroad, that very often Swedes come to Copenhagen in order to be treated by them. Mountebanks and quacks amongst the Danish medical men are likewise rare. This is the more to be wondered at, since the number of both physicians and surgeons is increasing greatly every year, in every part of the Danish dominions. In Copenhagen alone, with a population of 110,000, the number amounts already to 183, and that the condition, as well of those endowed with public offices as of mere private practitioners, is none of the most brilliant, will be evident from the following facts.

The salary which the state gives to those in royal public medical or surgical offices is extremely small: to the surgical, 150, 200, 400 dollars, (15*l.*, 20*l.*, 40*l.*;) to the medical, 400, 600, 900 dollars, (40*l.*, 60*l.*, 90*l.*;) according to the time of service. In order to gain a livelihood for his wife and children, the officer must devote all the hours of the day to practice, which in the country is burthensome in the highest degree; the county in which his office is, being often forty English miles in circumference, and every year younger colleagues are settling in his county, who take more and more of his practice from him. Still worse is the condition of the mere practitioner without any public office: he is not, as in England, paid for every visit to the patient, but gets his fee after his recovery; or, still more commonly, he attends families as "house-physician," paying visits every time a member of the family gets sick, and receiving his fee every new-year's day. This fee for the attendance of a whole year amounts usually to from twenty-five to thirty dollars (3*l.*); and this even from families where there are many children, and where, upon the whole, perhaps only one month of the year

has been without attendance. Only very few give fifty dollars (5*l.*); and he is a *rara avis*, and falling only to the lot of the older and very celebrated physicians, who pay the exceedingly large fee of 100 dollars (12*l.*) on new-year's day! For the care of a patient who is not attended by the medical men in quality of house-physician, he must think himself well paid when he gets ten or fifteen dollars (1*l.* or 1*l.* 10*s.*), and this perhaps after an attendance of several months. Many, even of the higher classes, pay nothing at all, and on that account, like good politicians as they are, change their physician every year or every time they become sick.

There is certainly a legal charge fixed for every visit the medical man makes, and for every receipt he writes; but such is the custom of the country, that a physician dare never ask his due, for by so doing he would be accused of sordid avarice, and be obliged to yield his patient to one or other of his many brethren, and at last lose entirely what practice he had. Only in the country the medical men who are not paid are accustomed to give in their bills, but many of their patients bitterly complain of such a mode of proceeding; and yet the charge for travelling fifteen English miles, and in this manner employing at least eight hours, is no more than five dollars (half a crown!) The Danish physician is really, to say truth, most fortunate in this respect when one of his patients, particularly a wealthy one, *dies*! for he is then always *requested* to give in his bill for his attendance; and he may then charge the heirs with a sufficient sum without risking objections, although this now and then happens, and he is, according to law, the first paid of all the creditors.

The miserable and unjust condition of the Danish medical men in all these respects need not be pointed out. It should not be left entirely to the arbitrement of patients to pay what they please: it should be a strict legal order for the medical man to deliver his bill according to a legal charge; it would not then, as now, be thought strange and self-interested to do so; the wealthier and more grateful patients might still, when so minded, give more than the legal demand; and, from so liberal a profession as the medical, the poor certainly would not have anything to fear by such an arrangement; for who would charge them? If, according to the present system, medical men, poor themselves, are sometimes obliged to charge or receive a fee from them, would this not happen much more seldom when they received a better and sure remuneration from the more opulent? As it is, the young medical man cannot gain a livelihood by practising, and the elder ones must, by the number of patients, try to compensate for the smallness of the fees: and this is one of the reasons why the most celebrated and most able Danish practitioners, endowed with the most valuable experience, are unable to do anything towards the advancement of the science.

In order to lessen the probable want that may arise to the family of a medical man who dies in poverty, there exist two *benevolent medical societies* for the relief and support of the widows and children of deceased medical men; one in Copenhagen, another in the provinces.

An amiable trait in the character of the medical profession in Denmark is the harmony that exists between its members. It scarcely ever happens that one practitioner, from sordid motives, blames the conduct of the other at the sick bed: one never interferes with the practice of another; and, if one is called to a patient whom he supposes to be attended at the time by another, or who has his own house-physician, he never prescribes for the patient without previously having ascertained whether he is called according to the wish and the consent of his colleague, and without having consulted with him: if he is called contrary to the consent of his colleague, or without his knowledge, he refuses to prescribe at all. On the other hand, in dangerous or obstinate cases, it is very common for one physician to take another with him in consultation; and there is not one single instance on record where such consultations have not ended in the most friendly manner.

The harmony and the scientific intercourse amongst the medical men in the Danish capital are supported by two *medical societies*.

1. *The Royal Medical Society.* This was founded as early as the year 1772, and counts now amongst its members all the elder and younger literary and able physicians and surgeons in Denmark. It consists of honorary, native, ordinary, and foreign corresponding members. The present number of the native ordinary members is forty-five; amongst the foreign members (sixty-two) are the following Englishmen: Mr. G. Wilkinson, of Sunderland; Sir Astley Cooper, of London; Dr. John Thomson and Dr. Wishart, of Edinburgh; Mr. Wardrop, Mr. Howship, and Dr. Elliotson, of London. The society meets only in the winter season, and on every other Thursday, at seven o'clock. At the meetings, original essays, remarkable cases, &c., are read by one or more members, and medical matters, and particularly epidemic diseases, are discussed, &c. The most scientific and friendly spirit pervades these meetings, and, although now more than sixty years have passed over the society, its zeal for the science continues unabated. It has special laws, which have lately been revised. The society has hitherto published seven volumes of its Transactions, (*Acta Societatis Regiæ Medicæ Hafniensis*;) but the greater part of later transactions have been published in the Danish medical journal, "*Bibliothek for Læger*," (the Physician's Library,) and (the custom of writing in Latin having ceased,) will in future continue to be so.

2. *The Philatria.* This is a medical society of younger date, having existed only four years: it consists only of the younger members of the profession in Copenhagen. It meets every Tuesday in the winter, at six o'clock; and its object is rather to discuss medical matters than to read essays, although this sometimes happens. It consists at present of thirty members.

From the existence and flourishing state of two such institutions in a town of only third rank, it may be inferred that a great love for science and literary pursuits exists in Denmark; and certainly the Danish medical man is thoroughly acquainted with the progress of medicine and the medical literature of all foreign countries. In this respect he does not yield to the medical men of any other country; and, from his necessary study of foreign languages, which are all known and spoken by well-educated Danes of the better classes, he even surpasses, in this particular, as well the English as the French and the Italians. In fact, medicine is the branch of science which has reached the highest degree of perfection in Denmark. The King's Library has a rich stock of medical works and takes in many foreign medical publications; the Medical Library, formerly noticed, is still richer in medicine, and subscribes to almost all the medical journals of Europe, the Italian alone excepted, which cannot be had without great difficulty. In the provinces also there are circulating medical libraries; and many medical men have good private libraries, and likewise subscribe to journals.

Notwithstanding this familiarity with medicine and its literature abroad, the medical men of Denmark are not prone to adopt new methods or new systems of medicine; and all the romantic and mystic hypotheses of Germany have been received with distrust, and have not been able to take root amongst us. We have never been either the first to adopt the new before it was sufficiently tried, nor the last to leave the old when its usefulness was proved beyond all question.

In their general methods of cure, the Danish medical men do not commonly use, but rather shun, heroic remedies: as true sons of Hippocrates, they follow his maxims in studying nature, and in endeavouring, in all their treatment, to obey it, and to sustain the *vires medicatrices*, not disturbing them by too active medicine. That, nevertheless, no extravagance in this respect is allowed to take place is proved by a golden book, by the late celebrated practitioner, Dr. Ludvig Bang, entitled "*Praxis Medica*," written in Latin, and once a standard of medical practice in Denmark. Nor is Denmark a home for quackery, being by far much less filled with quacks than England, France, or Germany. The rights of authorised medical men are strictly secured by laws which prohibit every species of quackery and unauthorised dispensation of medicine. In order to preserve the enforcement of these laws in all their vigour, all physicians

and surgeons are bound to put their name and official function on every one of their written prescriptions; and an alphabetical list of all authorised medical men and their assistants is annually distributed among the apothecaries, chemists, and druggists, who are prohibited by a heavy fine from delivering medicine to any other but those who present a prescription signed by the name of a legalised medical man; and it is incumbent upon every assistant (*amanuensis*) of a practitioner to take his examination within two or three years from the time of his appointment as assistant. All the provincial medical officers and the state-physician in every town must, according to law, report every year to the highest medical authority in Denmark whether any quackery has made its appearance during the year at their place of residence.

This "highest medical authority" in Denmark is the Royal Board of Health, which resides in Copenhagen, and was instituted in the year 1803. According to the royal decree, it now always must consist of ten medical members, five physicians, five surgeons, and two apothecaries. Every thing relating to medicine, surgery, and pharmacy in Denmark, medical police, medical and surgical practice, the state of the apothecaries' shops, the behaviour of midwives, &c., are under the superintendence of this Board of Health. Reports of epidemic diseases, of the state of health of the respective places, of remarkable cases, of unhappy accidents, of the quality of medicines that are sold by the apothecaries, of unauthorised practitioners, &c., must annually be sent to this College of Health by the several county physicians, who again are bound to obtain like special reports from the county surgeons and the mere private practitioners in their counties. The College of Health decides also upon the doubtful mental state of criminals or the accusal, and has likewise the privilege of making proposals to the king about the filling of vacant medical and surgical offices, on which account all applications for such vacant offices are first sent to it; and so great is the impartiality of the king, that he scarcely ever omits to ask the opinion of the College of Health, or acts contrary to it by listening to patrons or friends of the candidates for an office. It is but justice alone to state that the College acts with the greatest impartiality, weighs the respective merits of the many candidates in doubtful cases, leaving the final decision to the king. The only objection that might be made in this respect is that too much stress is laid upon the *age* of the candidates for such offices. The College of Health is also bound, in conjunction with the *Town* physician, to visit the shops of the apothecaries once a year (in the autumn), in order to examine the quality and goodness of all the medicines on sale; on which occasion also many chemical analyses are made.

The principal administration of the functions of the College of Health is undertaken by a Dean, who is annually changed, and by turns chosen among the medical and surgical members of the College. The College assembles once a fortnight (every other Saturday at six o'clock,) in order to examine and decide on the cases that have been laid before it; and these, in the interim, circulate among the members, all of whom, with the dean at the head, are bound to vote upon them.

It is remarkable that the members of this College, although really working hard in the fulfilling of their duties, and although having annually about six hundred different cases to decide upon, do not enjoy any pecuniary emolument or salary for their labours; the dean alone receiving, the year he is in office, 400 dollars (40*l.*), and his secretary 200 dollars (20*l.*). It is also a defect in the organization of the College of Health that it cannot refer directly to the king, but that all its decisions and proposals go through the royal Chancery; an arrangement that necessarily must damp the activity and the influence of the College; the Chancery, although not possessing one single man acquainted with medical affairs, often deciding contrary to the opinion of the College.

*Copenhagen; March 17, 1836.*

C. O.

## THE SIAMESE TWINS.

[THESE youths, who were brought from Siam in 1829, have been since they left this country to America, and are now in Paris. The following account of them is drawn up by a distinguished young physician of Paris.]

It is a law in fetal development, that central organs are formed by the union of lateral and similar organs. Thus the sternum is produced by two lateral sternums uniting in the median line, and this explains the remarkable conformation of these twins. Previous to the union of the two halves of the sternum, the right half of the sternum of one fœtus became united to the left half of the other at the lower part, thus connecting the two beings.

This connecting band united them at first face to face, but constant traction has so changed its direction that they are now side by side. Its length above is two inches, below nearly four: from above downwards it measures three inches, and its greatest thickness is one and half inch. It is formed thus: at the lower part of the sternum of each of the twins the xiphoid cartilage turns upwards and forwards, and meets that of the opposite side, between these two cartilages an articulation exists, permitting vertical and lateral motion. The band is thus formed superiorly by the xiphoid appendix, and by some of the cartilages of the ribs, and presents inferiorly the cicatrix of the umbilicus: the cavities of the two chests do not communicate, but the abdominal cavities do, on pushing the finger against the umbilicus into the abdomen when the youths cough, the viscera are felt projecting into the cavity in the band. It is covered by skin, and when the centre is touched both feel it, but on touching either side of the median line only the nearest individual is sensible of it. It has been proposed to divide the band, but if this description be correct,\* any incision would open the peritoneum: such a proposal is very disagreeable to the twins, who have often said they have never seen any single individual so happy as they are united.

Their names are Eng and Chang, and they were born in May 1811, in a small village on the coast of Siam, twenty leagues from Bankok, of Chinese parents. They have the Chinese features; the internal angles of the eyes slightly drawn down, skin yellow, and hair very black: they are extraordinarily alike, only Eng is a little larger and stronger, and Chang appears to rest more willingly on his brother. They are five feet in height, well proportioned, and of great muscular strength: they are very agile, they walk and run rapidly, and can swim as well as a single person. Their intellectual faculties are well developed. They understand English and speak it perfectly, but they have forgotten their native tongue, which is not to be wondered at, as they never speak to each other except sometimes asking a question. They have both an equal knowledge of English. Two persons have endeavoured to converse separately with each at the same time, but both turn invariably to one speaker and converse alone with him. They suffered from ague in America: the attack commenced at the same time in both, and the stages of the disease exactly corresponded, so that they experienced rigors, heat, and sweating at the same moment. Chang also had pain in his side, during which, his brother was uncomfortable, and when Chang was being bled, Eng felt indisposed. Their taste for food, for persons, and things, is similar; what pleases one, pleases the other: they both experience hunger and thirst, go to sleep and wake at the same instant: one is never awake whilst the other sleeps, and to wake them it is only necessary to touch one. During sleep they often change their position by one rolling over the other, without waking. There is the utmost uniformity in their motions, as if both were influenced by one will. They have never been known to be angry with each other: the one who wishes to perform any act, makes no sign to the other, who, notwithstanding, concurs without the slightest hesitation,

\* M. Coste arrives at a different conclusion, and in a note addressed to the Academy of Sciences states his belief that an operation for their separation offers the greatest chance of success. *Gazette Médicale*, 9 Jan. 1836.



and acts as the will of the first determines. This similitude of tastes, conformity of thoughts, and striking harmony of movements, can hardly be explained by mere juxta-position. The great likeness of twins, their brotherly friendship, and other moral and physical analogies are well known; but these Siamese youths from their accidental union are more than twins, and although they form two perfectly distinct beings, they appear most frequently to think, act, and move as one individual.

*Journal Hebdomadaire des progrès des Sciences Médicales, 2 Janvier, 1836.*

#### PROVINCIAL MEDICAL AND SURGICAL ASSOCIATION.

WE much regret that the fourth volume of the Transactions of the Provincial Medical and Surgical Association has reached us too late for review. The volume extends to nearly 600 pages, and is enriched by the address delivered at Oxford, in July last, by Dr. Prichard, and by many valuable papers. We are glad to observe that it is rich in medical topography. The volume is opportunely published: the fourth anniversary meeting of the Association is to be held at Manchester, at the rooms of the Royal Institution, in Mosley street, on Wednesday the 20th, and Thursday the 21st of July next; and we are glad to see that the Council have taken much pains to inform the members beforehand what will be the order of business at the meeting. The president, EDWARD HOLME, M.D., will deliver his address at seven o'clock on Wednesday evening, at the theatre of the Royal Institution; after which, the Report of the Council will be read. The Reports of the Committees appointed at the meeting at Oxford will then be received; and, if time will permit, will be read. On Thursday morning, at twelve o'clock, the members will again assemble at the theatre of the Royal Institution, and the Retrospective Address will be delivered by JOHN GREEN CROSSE, Esq. F.R.S., Surgeon to the Norfolk and Norwich Hospital; and the general business of the Association will be transacted. Separate rooms will be appointed for the committee on the Poor-Law Amendment Bill, and the committee of the Benevolent Society; and any gentleman wishing to make any communications on those subjects will be good enough to enquire for the respective committees. Each member, on arriving in Manchester, is directed to proceed to the Royal Institution in Mosley street, where persons will be placed to receive the names and abodes of members as they arrive, and to give every information as to the progress of business. On Thursday, at half-past five o'clock, the members will dine together; and we are particularly glad to learn that, at nine o'clock in the evening of Thursday, the members and their friends will hold a *Conversazione*, and every arrangement will be made with a view to promote friendly intercourse, and to facilitate the communication between members from different parts of the kingdom. The interest attached to the meeting will doubtless be increased by the arrangements of the Manchester committees. In the morning of Wednesday and Thursday, previously to the meetings of the Association, the rooms of the Natural History Society, the Royal Infirmary and Fever Wards, and some of the manufactories, will be open to the inspection of the members. It is unnecessary to speak of the advantages arising from these meetings; and we have no doubt that the meeting at Manchester will still further increase the influence and the utility of the Provincial Association.

#### EASTERN PROVINCIAL MEDICAL AND SURGICAL ASSOCIATION.

IN our last Number, (p. 533,) we noticed the establishment of this Association; and we are now happy to announce that it has met with the most marked encouragement and success. The first annual meeting of the Society was held at Ipswich, on Monday, the 6th June, and was attended by upwards of sixty members. Dr. Baird, of Ipswich, officiated as president, and Mr. Crosse, of Norwich, (to whose exertions we believe the Association owes its origin,) as secretary. The following extract from the Report of the Council will show the present state, objects, and purposes of the Society:—"The number of subscrip-

tions paid to the Society's account is 161, and the names of several gentlemen are enrolled from whom no remittance has yet been received, owing to the difficulty of collecting so small an amount,—so that on the present day, when we are not far advanced in the first year of the Society's establishment, the total of its members is not less than 170, and amongst them will be found many of the most venerable of the profession; many of whom have long been distinguished for their literary as well as medical writings, or for their extensive experience and reputation in practice. In the history of every enlightened class of society it has been found, that assembling its members together in large numbers has given a fresh stimulus towards its improvement, and the medical profession is so rich in resources as to profit by such intercourse above most others. Already the fruits of our assembling have ripened and been gathered. Several papers were read at the first meeting of the Council, which are reserved for publication, and others are now ready, some of which will be laid before the present meeting. In order to secure further services, particularly of gentlemen who, from excessive occupation or habits of seclusion, might not otherwise lend their aid, the Council recommend that it should be considered an essential part of the proceedings of each general meeting, to appoint several members to give jointly a report upon some subject referring to the climate, peculiar diseases, statistics, or natural history of the district. It is conceived that no topic is of greater importance to be noticed on this occasion than the terms recommended by the Committee, and the prospect which the Council hopes is held out, 'of effecting a junction with the parent Provincial Association for the publication of Transactions, and holding a general meeting once in a few years;' an arrangement so evidently calculated to produce mutual benefit, combining more of the advantages of union than if the Societies were one, and still retaining to each the chief privileges of a separate existence."

#### A LITERARY (MEDICAL) CURIOSITY.

In the Danish Medical Journal, *Bibliothek for Læger*, No. I. for 1836, Professor O. Bang, of Copenhagen, has published an *Essay on the Pathology of Diseases*, in the form of a Poem in rhyme! It consists of forty-three octave stanzas, and is entitled "*Livets Kamp med Dæden eller Sygdommens Oprindelse*." We are informed by those who are better critics than we can pretend to be in such matters, that the poem is really a valuable one, and that the verses are both harmonious and graceful, even where they have to treat of the most trivial circumstances. The medical principles inculcated in the poem are purely Hippocratic, the author deriving all diseases from the efforts of nature to remove what would injure or destroy the body. If Dr. Bang had not preferred being an excellent physician, he certainly might have become a famous poet.

#### NEW MAGAZINE OF ZOOLOGY AND BOTANY.

WE call the attention of such of our readers as are interested in the study of natural history (and we trust their number is not small,) to a new journal about to be published on this department of science. We agree with the proprietors of the magazine, that such a work is much wanted, and we doubt not that, under such management, it will be both ably and successfully conducted.

"It appears to the proposers of this new periodical that there is at present a great want of some work wherein the progress and discovery of Zoology and Botany can be regularly communicated; that there is now no such work in course of publication, for the many existing periodicals, otherwise excellent, are either devoted to a more extensive range of subjects, or are conducted upon a plan more suited to gain popularity than to advance science; that there is a rising band of young and zealous scientific naturalists, who want some medium for the regular publication of their researches, and whose communications and subscriptions would amply support a magazine conducted upon truly scientific principles. To endeavour to supply this blank in our zoological and botanical literature, the Magazine of Zoology and Botany is

proposed. It will be devoted exclusively to those branches of natural science, and will be entirely under the superintendence of SIR W. JARDINE, Bart., P. J. SELBY, Esq., and DR. JOHNSTON, of Berwick. It will be published on the first day of every month."

#### THE JACKSONIAN PRIZE.

THE Jacksonian Prize for the year 1835, by the College of Surgeons, London, has been adjudged to *Frederick Ryland, Esq.* of Birmingham, for a disputation on "Injuries and Diseases of the Larynx and Trachea, and their Treatment."

#### FOTHERGILLIAN PRIZE ESSAYS FOR 1837 AND 1838.

THE Council of the Medical Society of London have selected the following subjects for essays for the Fothergillian medal:—For March, 1837, "On the Use and Abuse of Mercury;" for March, 1838, "The Structure, Economy, and Diseases of the Ear." The Fothergillian medal is valued at twenty guineas. It may be competed for by any one on the following conditions: 1. The essay must be sent to the Registrar on or before the 1st day of December. 2. With it shall be delivered a sealed packet, with some motto or device on the outside, and within the author's name and designation; and the same motto or device shall be put on the dissertation, that the Society may know how to address the successful candidate. 3. No paper in the handwriting of the author can be received.

#### OBITUARY.

##### JOHN FLETCHER, M.D.

FOR the chief part of the following brief sketch we are indebted to a notice published in *The Edinburgh Evening Courant* of May 26th. We have added a few particulars from our own personal knowledge and recollections of Dr. Fletcher. We have reason to believe that the original notice in the Edinburgh paper is from the pen of Dr. Lewins, of Leith.

Dr. Fletcher was the eldest son of the late Mr. Thomas Fletcher, a respectable merchant in London. It was the intention of his father to bring him up to his own profession; and Dr. Fletcher, after having enjoyed the benefit of a liberal classical education, was actually placed in the counting-house for some time. But to a mind like his a mercantile life was intolerable, and no prospect of ultimate advantage was considered by him sufficient to induce him to forego the gratification which he promised himself in the cultivation of science and literature. To these he by degrees entirely devoted himself, and at an early period gave abundant promise that, in due time, he would gain for himself a name and a fame amongst the learned of the age.

Attracted by the superior advantages which the medical school of Edinburgh presented, he came to Edinburgh in the autumn of 1813, and commenced the study of medicine; having previously attended, though irregularly, the lectures of the late Mr. Abernethy and Sir Charles Bell in London.

In 1816, Dr. Fletcher obtained the degree of doctor of medicine, after writing and publicly defending an inaugural dissertation, "*De Rei Medicæ Vicissitudinibus*," which, from its intrinsic excellence, but especially from the uncommon purity of its Latinity, attracted the notice, and we believe obtained the approbation, of the late distinguished Dr. Gregory, then professor of the practice of medicine in the university of Edinburgh.

Dr. Fletcher intended to settle in London, but an event occurred soon after he finished his medical studies, which not only frustrated his intentions in regard to his proposed place of residence, but entirely altered the whole plan of his future life. This event, to which it is unnecessary here more particularly to advert, deprived him of all his patrimony, and rendered it necessary that he should call his talents into operation to provide for his immediate wants; wants which, although nurtured in affluence, he could, to his credit, make few, when prudence or necessity required such a sacrifice.

The system of teaching medicine, and the mode of granting medical degrees, at the period to which we allude, was in many respects faulty and imperfect. The practice of conducting all the examinations in the Latin language made it necessary for the candidates to employ a class of men known by the name of *grinders*, who frequently did little else for their pupils than enable them to answer questions by rote in bad Latin. Dr. Fletcher's knowledge of this discreditable practice induced him to return to Edinburgh, with the view of establishing a system of tuition akin to that which is practised at Oxford in the way of private tutorship; a mode of life more congenial to his literary habits than the drudgery of general medical practice.

As soon as it was known that he had arrived in Edinburgh with the view just mentioned, the most respectable medical students flocked to him for instruction, and Dr. Fletcher was thus at once enabled to render his superior medical and classical attainments available, and for all immediate purposes to supply his loss of fortune.

The labours which devolved upon him soon became very considerable. His pupils were usually divided into classes of four, and each class had an hour's examination. His occupation began at eight o'clock in the morning, and sometimes lasted twelve hours, particularly at the close of the winter session, when the pupils were preparing for examination. To those enabled by their previous education fully to profit by his instruction, his critical commentaries on Celsus were invaluable. Few, we think, can turn to the fourth book without remembering the acuteness and judgment by which his remarks were characterised, and by which his pupils were led to a full appreciation of one of the most elegant and judicious of the ancient writers on physic and surgery. The margin of our own copy is full of notes that recall to us hours of profitable and delightful study, under his most able direction. His care was not confined to imbuing the student with a love of the classical beauties of Celsus, or to supplying him with an abundant and expressive vocabulary of Latin conversation, although in this he had perhaps no equal: his pupils felt that, under his tuition, all their previous knowledge became arranged and available. They learnt both the degree of their acquirements and the extent of their deficiencies. He required exact thoughts in exact words; and, whilst the taste was improved, the memory and understanding were vigorously exercised. We speak of him as we knew him sixteen years ago; and those who remember him about the same period will smile when they recall the magisterial authority enjoyed by so young a teacher as he then was over pupils of various ages, and even over some who were his seniors. He was systematic in every thing. His time was accurately divided, and he never wasted any portion of it. It was a maxim with him that whatever was said, written, or done, might be said, written, or done, in a certain assigned space, and that all waste of space and time was an abandonment of power that any one might exercise. His own powers were certainly tasked to the utmost, and, even at the time of which we are speaking, his health had begun to be impaired, although he endeavoured, by riding on horseback daily, to counteract the fatal tendency of too great daily exertion. In fact, when it is recollected that to each of his pupils the hour passed with Dr. Fletcher was, of all hours of the day, that of the greatest mental activity, it may be supposed that the tutor's mind was far too much exerted.

In society, Dr. Fletcher was cheerful, and even animated; he was fond of music, possessed considerable knowledge of the fine arts, and varied literary attainment. The *Epistles of Rubus*, (*Rubi Epistolæ Edinburgenses*), published by him when a student, sufficiently attest his vivacity and wit, as well as his unlimited command of Latin and Greek. Their composition would have done honour to a university in which classical acquirement was held in greater esteem; and, with the exception of some occasional satire, the remarks they contain on the life and manners of the students, and the merits of the professors, will render them ever valuable to every lover of Edinburgh.

In the year 1822, he embodied several of his critical observations on the col-

loquial employment of the Latin language, in a very useful little book entitled *Horæ Subsecivæ*. This publication, and the *Epistles of Rubus*, are, we believe, now somewhat scarce; and we cannot but recommend those who desire to see something more correct in daily use than the ordinary language of prescription, to place both these little works on the shelves of their library.

Dr. Fletcher joined the Argyle-square Medical School in 1828-29, as lecturer on physiology, and latterly also lectured there on medical jurisprudence. He taught both of these branches of medical science in a manner which has seldom been equalled, never surpassed in Britain.

The rapid extension of his fame in the medical and scientific world affords unquestionable evidence of his superior attainments, whilst the steady increase of the number of his pupils proved how highly his talents as a public teacher were appreciated and valued.

In the beginning of the present year, at the urgent solicitation of several individuals who knew the extent of his attainments, he announced his intention of delivering a course of popular lectures on physiology, which he did to a numerous and intelligent audience, amongst whom were some of the most talented members of the Scottish bar and of the English church, and many other gentlemen distinguished for their intellectual endowments. The variety and extent of interesting information which Dr. Fletcher communicated,—the vast store of scientific knowledge which he brought to bear on the subject,—and the beautiful preparations and diagrams (all the work of his own hands, and which would have done credit to a first-rate artist,) by which he illustrated his subject, delighted and astonished his audience. Little, alas! did they think, whilst listening to his graphic description of the wondrous structure of organized bodies, and his luminous but delicate exposition of the functions of their various complicated organs, so illustrative, as he justly expressed it, of the wisdom and goodness of God, that his sun was to set so suddenly, whilst it was yet day, and before he had finished the work so energetically and auspiciously begun.

Dr. Fletcher, whose health for some time previously had been in a delicate state, found it necessary to confine himself to the house on the 3d of May; but so insidiously did the disease which was destined in a few days to number him with the dead make its attack, and continue its fatal progress, that no alarm had been excited in his own mind, or in that of his affectionate wife, until Dr. John A. Robertson, having occasion to call on business, discovered the actual and alarming condition of his valued friend.

Dr. Fletcher was afterwards seen by other highly talented members of the medical profession, who most anxiously and perseveringly rendered all the assistance which their art was capable of affording, but in vain. He expired early on the morning of the 10th of May, in the 44th year of his age, after a week's confinement to the house, and scarcely an entire day to his bed.

The immediate cause of Dr. Fletcher's death was an inflammatory affection of the lungs. Subsequent investigation, however, discovered that the condition of these important organs was such as to preclude the probability, if not possibility, of long life; but it is too true that Dr. Fletcher's intense and unremitting application to study was the means of shortening his valuable life.

Dr. Fletcher was the author of several works of considerable talent, but we shall here only advert to that on *Physiology*; and on it alone his claim to professional distinction may be safely founded. Of it only two parts are published,—the first on *Organism*, and the second on *Life as manifested in Irritation*. The third part, on *Life as manifested in Sensation and Thought*, has yet to appear. Although the manuscript of that part is perhaps not exactly in the state in which the lamented author would have sent it to the press, yet it is fortunately sufficiently perfect for publication, and will appear in due time.

Of the great merits of Dr. F.'s principal work, the *Rudiments of Physiology*, we shall speak at length in our next Number.

We cannot omit here to advert to Dr. Fletcher's published introductory dis-

course to his popular lectures on Physiology, which were cut short by his untimely death; a production of great talent, and strikingly characteristic of an original and independent mind. This lecture was printed at the special request of several gentlemen, well qualified to judge, who heard it delivered, and who were of opinion that its publication "in such a form as to render it easily accessible to all classes of the community would greatly subserve the cause of popular enlightenment."

It were an easy and a grateful duty to expatiate on Dr. Fletcher's private worth, on the refinement of his mind, the extent and versatility of his talents and acquirements, his high sense of honorable conduct, the value of his friendship, and the exemplary manner in which he discharged his duties in private life; but, as it is only consistent in this place to delineate his public character, we conclude this imperfect biographical sketch by the expression of our unaffected sorrow on having to record the unexpected death of a physician whose learning and whose scientific acquirements reflected honour upon medicine;—to whose instructions, too, (the writer of this notice would gratefully add,) we consider ourselves indebted for very important assistance in studies strictly professional, as well as in others from which has proceeded the happiness of many leisure hours. The reflection that Dr. Fletcher's useful life was shortened by his intellectual labours takes nothing from the deep regret we cannot but feel that his valuable exertions were not permitted to be prolonged.

#### NATHAN DRAKE, M.D.

ALTHOUGH a highly respectable and much respected member of the medical profession, and although distinguished in his own circle as a physician, Dr. Drake was much more known as a popular and successful cultivator of general literature. He was a very voluminous writer, as will appear from the following list of his principal productions:

Poems. *Lond.* 1793. 4to.—Literary Hours; or Sketches, Critical, Narrative, and Poetical. *Sudbury*, 1798-1800. *Lond.* 1804. 3 vols. 8vo.—Essays illustrative of the Tatler, Spectator, and Guardian. *Lond.* 1805. 3 vols. 12mo.—Essays illustrative of the Rambler, Adventurer, Idler, &c. *Buckingham*, 1809. 2 vols. 8vo.—The Gleaner; a Series of periodical Essays, selected from Papers not included in the British Essayists. 1811. 4 vols. 8vo.—Winter Nights. 2 vols. 8vo.—Shakespeare and his Times. 2 vols. 4to. 1817.—Autumn Evenings. 2 vols. 8vo.—Noontide Leisure. 2 vols. 8vo.—Mornings in Spring, 2 vols. 8vo. 1828.—Memorial of Shakespeare. 8vo.

We are not aware of Dr. Drake having published any distinct medical work. In the year 1799, he communicated to Dr. Beddoes some Observations on the use of Digitalis in Consumption, which were published in his work entitled "Contributions to Physical and Medical Knowledge;" and he contributed two papers on the same subject to the second volume of the London Medical and Physical Journal, for the same year. He also published a singular case of Diseased Spleen, in the Edinburgh Med. and Surg. Journal for 1806, vol. ii.

Dr. Drake graduated at Edinburgh in the year 1789, his thesis being *De Somno*. He spent the greater portion of his life at Hadleigh, in Suffolk, where he died on the 7th June last, in the seventy-first year of his age. As a medical practitioner, Dr. Drake was deservedly esteemed by his professional brethren for his courtesy and skill; while to those whom he attended, he was yet more endeared by the urbanity of his manners and the unaffected kindness of his heart.

#### DR. WALSHMAN.

At the advanced age of ninety, Dr. Walshman: he had been in practice during the last sixty years in the neighbourhood of Kennington, Clapham, Brixton, and Camberwell, where his experience and skill, more especially in pulmonary cases, made him a great authority. He belonged to the

sect of Westleyan methodists, and was a great promoter of educational and other institutions connected with that respectable body. He has left property, it is said, to the amount of £200,000.

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DR. HOSACK.

At New York, on the 22d December, 1835, David Hosack, M.D., F.R.S., L. and E., formerly Professor of Medicine in the University, and Physician to the Hospital in New York. Dr. Hosack was one of the most distinguished medical writers of America, and his works are well known in this country. The following are the titles of some of the principal:

Syllabus of Lectures on Botany, 8vo. New York, 1795.

Lecture on Medical Education, 8vo. New York, 1801.

Hortus Elgensis; or a Catalogue of Plants cultivated in the Elgin Botanic Garden, New York. New York, 1811.

A Statement of Facts relative to the Establishment and Progress of the Elgin Botanic Garden. New York, 1811.

Observations on the Laws governing Contagious Diseases. 4to. New York, 1815.

A System of Practical Nosology. First edition, 1818; second, 1821.

Essays on various Subjects of Medical Science. 8vo. 2 vols. 1824.

Observations on the Medical Character. 8vo. 1826.

Dr. Hosack died of apoplexy, occasioned, it is said by some of the foreign journals, by concern for the loss of 300,000 dollars in the great fire at New York. A German journal, in adverting to this circumstance, observes that few German doctors will die from a like cause. (Eine Todesursache, die unter den in Deutschland praktisirenden Aertzen nicht beobachtet sein soll!)

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BOOKS RECEIVED FOR REVIEW.

1. A TREATISE on the Chemical, Medicinal, and Physiological Properties of Creosote, illustrated by Experiments on the lower Animals; with some Considerations on the Embalment of the Egyptians. Being the Harveian Prize Dissertation for 1836. By J. R. Cormac, Member of the Royal Medical and Physical Societies of Edinburgh.—Edinburgh, 1836. 8vo. pp. 154.

2. A Lecture on the Elements of Physical Education. By M. Louis Frechet. Read at the Philosophical Institutions at Bristol and Bath, 1835.—Bristol, 1836. 8vo. pp. 36.

3. Observations on Lord John Russell's Bill for registering Births, Deaths, and Marriages in England. By J. Yates, M.A.—London, 1836. 8vo. 2s.

4. On the Deaths of some eminent Philosophers of modern Time. By Sir Henry Hallford, Bart.—London, 1836. 8vo. pp. 30.

5. The Obstetrician's Vade-Mecum; or, Aphorisms on Natural and Difficult Parturition, the Application and Use of Instruments, &c. By Thomas Denman, M.D. Considerably augmented, and arranged according to the present State of Obstetrics, by Michael Ryan, M.D. Ninth Edition.—London, 1836. Small 8vo. pp. 234; 17 plates.

6. Quackery; its Danger, Irrationality, and Injustice; the Causes of its Success; the best Means for its Suppression.—Bath, 1836. Pp. 18.

7. Guy's Hospital Reports. No. II. April, 1836. Edited by G. H. Barlow, M.A., and J. P. Babington, M.A.

8. Pathological Observations on the Diseases of the Placenta. Part I. Congestion and Inflammation. By J. Y. Simpson, M.D., President of the Royal Medical Society of Edinburgh. (Reprinted from the Edinburgh Medical and Surgical Journal, No. 127.)—Edinburgh, 1836. 8vo. pp. 47.

9. Factory Statistics. The Official Tables appended to the Report of the Select Committee on the Ten-hour Factory Bill, vindicated in a Series of Letters. By the late M. T. Sadler, Esq. F.R.S.—London, 1836. 8vo. pp. 80.

10. Outlines of Human Pathology. By Herbert Mayo, F.R.S.—London, 1836. 8vo. pp. 330.

11. The Physiology of Digestion, considered with relation to the Principles of Dietetics. By Andrew Combe, M.D.—Edinburgh, 1836.—8vo. pp. 332.

12. A new Dictionary of Medical Science and Literature. By R. Dunglison, M.D. &c. 2 vols.—Boston, 1833.

13. *Medical Commentaries on Puerperal Fever, Vermination, and Water in the Head.* By John Alexander, M.D.—London, 1836. 8vo. pp. 69.

14. *A Discourse on self-limited Diseases.* Delivered before the Massachusetts Medical Society, at their annual meeting, May 27, 1835. By Jacob Bigelow, M.D.—Boston, 1835. 8vo. pp. 48.

15. *The Physiology of Respiration and Chemistry of the Blood, applied to Epidemic Cholera.* By F. B. Joslin, M.D. (Extracted from the Transactions of the Medical Society of New York—New York, 1835. 8vo. pp. 32.

16. *An Address delivered to the Graduates in Medicine at the annual Commencement of the University of Maryland, in 1834.* By Professor Dunglison.—Baltimore, 1834. 8vo. pp. 21.

17. *Principles of Pathology and Practice of Physic.* By John Mackintosh, M.D. Lecturer in Edinburgh, &c. With Notes and Additions, by S. G. Morton, M.D.—Philadelphia, 1836. 2 vols. 8vo.

18. *Human Physiology; illustrated by Engravings.* By Robley Dunglison, M.D. &c. Second Edition, with numerous additions and modifications.—Philadelphia, 1836. 2 vols. 8vo.

19. *Researches in Medicine and Medical Jurisprudence.* By J. B. Beck, M.D. &c. Second Edition.—New York, 1835. 8vo. pp. 258.

20. *Manual of Practical Toxicology; condensed from Dr. Christison's Treatise on Poisons, with Notes and Additions.* By J. F. Ducatel, M.D. &c.—Baltimore, 1835. 8vo.

21. *On the Diagnosis of Diseases of the Chest; based upon the Comparison of their physical and general Signs.* By W. W. Gerhard, M.D.—Philadelphia, 1836. 8vo. pp. 183.

22. *Surgical Anatomy of the Arteries.* By N. R. Smith, M.D., Professor of Surgery in the University of Maryland. 2d Edition, much enlarged; with twenty coloured Plates and many Woodcuts.—Baltimore, 1835. 4to. pp. 133.

[For the works No. 13—22 inclusive, we are indebted to the kindness of Professor Dunglison, of Baltimore.]

23. *Isis Revelata: an Inquiry into the Origin, Progress, and present State of Animal Magnetism.* By J. C. Colquhoun, Esq., Advocate, F.R.S.E.—Edinburgh, 1836. 2 vols.

24. *Cyclopædia of Anatomy and Physiology.* Part VI. (Cavity-Cilia.) May, 1836.

25. *Lectures on the Nervous System, and its Diseases.* By Marshall Hall, M.D. F.R.S.L. & C.—London, 1836. 8vo. pp. 171.

26. *The Clinique Médicale; or, Reports of Cases.* By G. Andral. Translated by D. Spillan, M.D. Part IV. *Diseases of the Abdomen.*—London, 1836. 5s.

27. *Eupædia; or, Letters to a Mother on the watchful Care of her Infant; in reference to Diet, Clothing, Air, Exercise, Medicine, &c.* By a Physician.—London, 1836. 12mo. pp. 144.

28. *Essay on the Disorders incident to Literary Men, and on the best Means of preserving their Health.* Read before the Royal Society of Literature. By W. Newnham, Esq. M.R.S.L.—London, 1836. 8vo. pp. 36.

29. *Illustrations of the Botany and other Branches of the Natural History of the Himalayan Mountains, and of the Flora of Cashmere.* By J. F. Royle, Esq. F.L.S. &c. Part IX.

30. *On Disease of the Hip-Joint, with some Observations on Deformities of the Chest.* By William Coulson, M.R.C.S. &c.—London, 1836. 8vo. pp. 32; with a Plate.

31. *An authentic Report of an introductory Lecture on the important Subject of Medical Reform; delivered in the School of Anatomy, Medicine, and Surgery, Peter street, Oct. 30, 1835.* By Andrew Ellis, Esq.—Dublin, 1836.—8vo. pp. 63.

32. *Observations on the Medical and Surgical Agency of the Air-Pump.* Read before the British Association in 1835. By Sir James Murray, M.D.—Dublin, 1836. 8vo. pp. 63.

33. *Lectures on Subjects connected with Clinical Medicine.* By P. M. Latham, M.D.—London, 1836. 8vo. pp. 322.

34. *An Enquiry into the Pathology, Causes, and Treatment of Puerperal Fever: being an Essay for which the Fothergillian Gold Medal was conferred on the Author by the Medical Society of London, in March, 1835.* By G. Moore, F.R.C.S. and F.R.M.C.S.—London, 1836. 8vo. pp. 247.

35. *Address of Earl Stanhope, President of the Medico-Botanical Society, for the Anniversary Meeting, Jan. 1836.*—London. 8vo. pp. 30.

36. *History and present State of Brighthelm House near Bristol, an Asylum for the Cure and Reception of Insane Persons.* Conducted by F. and C. Fox, M.D.—Bristol, 1836. 4to. pp. 10; with Plates.

37. *Report on the Medical Institutions of Ireland.* By W. P. Borrett, M.D.—London, 1836. Pp. 30.

38. *The Transactions of the Provincial Medical and Surgical Association.* Vol. IV.—London, 1836. 8vo. pp. 578.



39. On the Antidotal Treatment of the Epidemic Cholera. By John Parkin.—London, 1836. 8vo. pp. 112.

40. A Popular View of Homœopathy. By the Rev. T. R. Everest. Second Edition.—London, 1836. Pp. 151.

41. Catastæ: a familiar Description of its Nature, &c. By John Stephenson, Esq. Second Edition.—London, 1836. 12mo. pp. 136.

## FOREIGN.

1. Diagnostisch-praktische Abhandlungen aus dem Gebiete der Medicin und Chirurgie, durch Krankheitsfälle erläutert vom Dr. Löwenhardt. Erster Theil.—Prenslau, 1835. 8vo. pp. 352.

2. Ueber Volkskrankheiten und deren bekämpfung. Von Ernst L. H. Lehenheim, Dr. Med. et Chir. &c.—Hamburg, 1836. 8vo. pp. 144.

3. Die Influenza. Ein historischer und ætiologischer Versuch von Heinrich Schweich, Doctor der Medicin und Chirurgie. Mit einer Vorrede von Dr. J. F. C. Hecker, m.d. &c.—Berlin, 1836. 8vo. pp. 188.

4. Zur Diagnostik der Lungen- und Herkrankheiten mittelst physikalischer Zeichen: mit besonderer Berücksichtigung der Auscultation und Percussion. Von Dr. P. J. Philipp.—Berlin, 1836. 8vo. pp. 358.

5. S. A. Steinii Tabulæ Anatomicæ præcipuarum humani corporis regionum, in quibus graviores operationes chirurgicæ suscipiuntur. Fasciculi primi Pars prior, Pars posterior.—Hæuniz. Fol. 1831-33.

6. Thymi in homine ac per seriem animalium descriptio anatomica, pathologica, et physiologica, iconibus xxxiv illustrata. Auctore F. C. Haugsted, m.d.—Hafniz, 1832. 8vo. pp. 286.

7. Beiträge zur Philosophie der Seele. Von C. F. Flemming, m.d.—Berlin, 1830. 2 vols. 8vo. (From Dr. Oppenheim.)

8. Curbilder, mit Bezug auf Cholera. Vom Dr. Krüger-Hansen.—Rostock, 1831. 8vo. (From Dr. Oppenheim.)

9. Erfahrungen über Homœopathie unter den augen homœopathischer Aertze gesammelt. Von Dr. C. C. Friedheim.—Berlin, 1835. Pp. 80.

10. Beiträge zur geschichte des Petichial-typus. Von Karl Pfeufer, m.d.—Bamberg, 1831. 8vo.

11. Dissertatio de Signis, mortem hominis absolutam ante putredinis accessum indicantibus.—Hæuniz, 1833. 8vo. (From Dr. Otto.)

12. Wider die Mystification in der Medicin. Von Dr. C. N. E. Bischoff.—Bonn, 1830. 8vo.

13. Anviisning til at Kjende Lunge- og Hierte-Sygdomme ved Percussion og middelbar Auscultation. Ved Dr. Med. S. Trier.—Kjöbenhavn, 1830. 8vo. (From Dr. Otto.)

14. J. A. Paris, m.d. Diætetik, Oversat af Engalak, af F. V. Mansa, m.d. (Translation of Dr. Paris's work on Diet, into Danish.)—Kjöbenhavn, 1832. 8vo. (From Dr. Otto.)

15. Relatorio dos Trabalhos da Sociedade de Medicina do Rio de Janeiro & pelo Dr. L. V. De-Simoni.—Rio de Janeiro, 1831-2. 8vo.

16. Ueber das Verhältniss der Nervösen Fieber zu Cholera und Intermittens. Von Joseph Heine, m.d.—München, 1833. (From Dr. Oppenheim.)

17. Education Physique des jeunes Filles, ou Hygiène de la Femme avant le Mariage. Par A. M. Bureau-Rioffrey, m.d. &c.—Paris, 1835. 8vo. pp. 352.

18. Die Erkenntniss und Heilung der Ohrenkrankheiten. Von Dr. Wilhelm Kramer.—Berlin, 1836. 8vo. pp. 400.

19. Discurso sobre as Molestias que mais affligem a classe pobre do Rio Janeiro. Pelo J. M. Da Cruz Jobim, Medico do Hospital da Misericordia, &c.—Rio de Janeiro, 1835. 8vo. p. 35.

20. Compte Rendu des Travaux de l'Ecole de Médecine d'Abou-Zabel, (Egypte,) &c. Par Clot-Bey, m.d. &c.—Paris, 1833.

21. Epitome Therapiæ Generalis; in usum discipulorum scripta G. C. B. Suringar, m.d. &c.—Amstelodami, 1834. 8vo. pp. 150.

22. Epidemia Vailulosa del 1829, in Torino, &c. Per T. D. Griva.—Torino, 1831. 8vo. pp. 249.

23. Die Homœopathie und Allopathie auf der wage von Krüger-Hansen.—Güstrow, 1833. 8vo. (From Dr. Oppenheim.)

24. Zweiter Anatomischer Bericht der Pathologischen Präparate, &c. Von Dr. C. T. Tortual.—Münster, 1833. 4to.

25. Ueber die Augenkrankheiten welche in der Belgische Armee herrscht. Von J. C. Jüngken, m.p.—Berlin, 1834. 4to.

26. Heelkundige Mengelingen, door J. F. Kerst, Chirurgical Doctor, &c.—Utrecht, 1835. 8vo. pp. 256.

27. Schets der Heelkunde tot leiddraad voor zijne Lessen uitgegeven door C. B. Tilanus, Med. et Chir. Doct. &c.—8vo. pp. 193. Amsterdam, 1835.

28. Ueber Paralyse der Inspirations-Muskeln. Von Dr. Louis Strömeyer, Königl. Hofchirurgus, &c.—Hannover, 1836. 8vo. pp. 144.

THE  
BRITISH AND FOREIGN  
MEDICAL REVIEW,

FOR OCTOBER, 1836.

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PART FIRST.

Analytical and Critical Reviews.

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ART. I.

*Traité Clinique des Maladies du Cœur, précédé de Recherches nouvelles sur l'Anatomie et la Physiologie de cet Organe.* Par J. BOUILLAUD, Professeur de Clinique Médicale à la Faculté de Médecine de Paris.—Paris, 1835. Deux tomes. 8vo. pp. 534, 632.

*A Clinical Treatise on the Diseases of the Heart, preceded by original Researches on the Anatomy and Physiology of that Organ.* By J. BOUILLAUD, Clinical Professor to the Faculty of Medicine at Paris.—Paris, 1835. Two volumes.

IN terminating an article on this work in a former Number, we promised speedily to return to it, and give a detailed analysis of its more strictly practical portion. This promise we now proceed to fulfil.

The part which immediately follows that which last occupied us consists of some general remarks on the diseases of the heart. In these the author examines, in succession, their precise seat and anatomical characters; their diagnostic signs, causes, nature, and classification; their progress, duration, and termination; their prognostics and treatment; and, finally, their complications with each other, as well as with diseases of other organs. Nothing is more rare than disease of the *whole* heart: frequently it occupies but one cavity of the organ, or even but one tissue out of all those which go to form the walls of such cavity. The physiological characters or symptoms of diseases of the heart he considers at large, under the two heads of Local Signs and General Signs; and, in the investigation of the former, agrees with all other good modern observers in considering auscultation and percussion as the most valuable of all our resources, and next to these he places inspection and examination by the touch. He points out very forcibly the error into which many systematic writers on diseases of the heart have fallen, of ascribing to *all* its lesions indifferently certain secondary conse-

quences, which are really attributable only to particular ones. Thus, some have erroneously ascribed to pure and simple hypertrophy of the heart those venous congestions and passive serous effusions which, so far from recognizing for their cause such an increase of action as accompanies a true hypertrophy, depend, on the contrary, on the diminution of the force or moving power of the heart, or on a mechanical obstacle to the course of the blood through its cavities. We must admit, he continues, two principal modes in which secondary morbid phenomena are produced in cases of diseased heart,—namely, one which is altogether physical and mechanical, as in the case of displacement and compression of the lungs by an enlarged heart, or in that of passive congestions in a variety of organs, from induration of the valves and narrowing of the orifices opposing the free transmission of blood; whilst the other principle is purely sympathetic or vital, and is exemplified in the fever depending on inflammation of the various tissues of the heart.

The influence exercised over the circulation in general, and especially over that of certain viscera, (as the lungs, the liver, the spleen, and the brain,) by particular diseases of the heart, is remarkably great; and these secondary or symptomatic affections have too often been mistaken for primary inflammatory diseases of the suffering organs, and occasionally even for those of a merely nervous character. We have thus ourselves known headaches from this cause, of such a degree of intensity and so frequent occurrence as to render life miserable, exist from youth up to middle age, without their real source in disease of the heart having ever once been suspected, even by physicians of the first eminence, at least till the fatal termination was approaching, and the supervention of passive dropsies opened the eyes of the attendants to the true nature of the case.

The sympathetic effects connected with diseased heart vary according to the portion of this organ chiefly implicated. Thus, when the left ventricle is the seat of well-marked hypertrophy, the face is for the most part red and animated, and the eyes are brilliant; there is dizziness and confusion of head, and, towards the conclusion, formidable epistaxis, and occasionally even cerebral hæmorrhage. Whereas, if it be the right ventricle which is so affected, (a much rarer case,) slight spitting of blood, or occasionally even pulmonary apoplexy, ensues. The cause of the difference is obvious. If there be any mechanical obstruction to the circulation through the heart, on which soever side it may be situated, it will necessarily give rise to much disturbance in the arterial, venous, and capillary circulation generally: this will, however, vary much in degree and kind, according as the impediment is situated in the right side or in the left: thus, if it be in the left, the lung will feel the first effects of it, though no doubt it will subsequently extend its influence to the right cavities and to the veins which

empty themselves into the right auricle. If the obstacle, on the contrary, be in the right side, the *venæ cavæ*, the veins of the liver, spleen, brain, face, &c., will be the first to suffer, giving rise to passive congestions of the parts just named. But it is erroneous, however, to state absolutely, as is done by some authors, that the effects just detailed are exclusively connected with affections of the right side; although they certainly manifest themselves much earlier here, and in a higher degree. M. Bouillaud lays much stress on mechanical obstruction as a cause of the above derangements of the circulation than Dr. Hope, though he readily admits that simple dilatation, hypertrophy, &c. may occasionally give rise to them. Testa has placed amongst the incidental consequences of diseases of the heart the destruction of the eyeball, depending probably on deep-seated derangement in the circulation of the capillaries of the part; as also gangrene of the limbs; and in the present work there are one or two cases illustrative of the latter, as it occurs in the advanced period of heart disease: but M. Bouillaud does not look upon either of these occurrences as its direct consequence. In the cases of gangrene, he has usually found a coagulum in the artery leading to the part; and he looks upon this as the immediate cause of the affection.

*Causes.* In his chapter on the Etiology of the diseases of the heart, though he by no means impugns the influence of the special causes to which they are by most writers attributed, he is of opinion that the fact that they may originate, like the disorders of other organs, under the influence of general causes, is too often lost sight of; for he is convinced that in these, and more especially in exposure to cold and the consequent inflammation, we shall find their chief source. The laborious and almost unceasing action of this organ; its sympathy with all the other parts of the body, so strikingly manifested in acute and chronic local affections, accompanied by fever; its liability to suffer from long-continued and violent muscular efforts, and everything which embarrasses the lungs, too stimulant a diet, moral affections, and a host of other causes so eloquently detailed by Corvisart, are facts which need only be mentioned to satisfy us that it is exposed to a greater number of deranging influences than perhaps any other organ in our system.

Corvisart, and still more recently an Italian writer, M. Schina, has dwelt very largely on the influence of the moral affections in the production of diseases of the heart; and we cannot agree with M. Bouillaud when he endeavours to limit their operation to the development of mere nervous disorders of this organ, excluding, in a great degree, from their range those of an acute or of an organic nature. We fully join him, however, in dissenting from Corvisart's assertion, that the heart is placed out of reach of the influence of sudden atmospheric changes; for it is matter of daily observation that pericarditis, for example, originates readily under the same

external influences as a pleurisy or an acute rheumatic attack; and this is likewise the case, according to our author, in regard to inflammation of the internal lining membrane of the heart; a disease which so often coexists, as already stated, with pericarditis, and a just knowledge of which, he thinks, is destined to work a complete revolution in respect to our notions on the pathology of the heart.

An hereditary predisposition to diseases of the heart is in some instances unquestionable, and has long since been sufficiently established by Morgagni, Senac, Corvisart, and others. Lancisi, in particular, mentions that a great-grandfather, grandfather, father, and son, were successively affected with aneurism of the heart; Albertini speaks of a woman and her five brothers, all martyrs to the same affection; M. Bouillaud says he has daily proof of the opinion being well founded; and we may add, that our own observation (agreeing, we doubt not, with that of every experienced physician,) enables us to attest the same.

The chief object of M. Bouillaud's book, which seems to be to prove that the great majority of diseases of the heart originate in acute and chronic inflammations of its tissues, is very largely developed in the present section. He asserts that, before he had become possessed of numerous and exact records of cases of this kind, such as his work abounds in, and more especially of endocarditis, or inflammation of the inner lining membrane of the organ, he had but very confused notions on many questions relative to organic diseases of the heart; but that, when once he had obtained a collection of accurate facts bearing on the subject, and made them the object of his careful study, his eyes became as it were unsealed, and a new light burst in on him. That, in a very great majority of cases, the lesions alluded to have really an inflammatory origin, especially when occurring in the more vigorous periods of life, or when they have been obviously preceded, at some time or other, by acute symptoms, must, we think, be fully admitted by all those who take fairly into consideration the structure and pathological analysis of the parts affected.

With regard to the formation of a satisfactory classification of the diseases of the heart, much has been attempted, but little has been done hitherto. Nature conforms herself to no artificial arrangements, and diseases of the heart, even more than those of other organs, present themselves almost invariably in a complex form; two or more morbid conditions for the most part coexisting, and especially if the case offer itself to our observation at an advanced stage.

*Progress.* It is a curious circumstance that the symptoms of organic disease of the heart are, to a certain degree, of an intermittent nature. This was alluded to by Corvisart, who adduces two instances of aneurism of the aorta simulating, from this cause, spasmodic asthma. Some later French pathologists, amongst whom we

believe we may place M. Rostan, conceive that all cases of so-called nervous periodic asthma are merely symptomatic of organic affections within the chest. M. Bouillaud, on the other hand, thinks that the periodicity is not really the attribute of the organic disease, but is rather to be ascribed to the coexistence of a neurosis of the heart. However it is to be explained, the fact of the symptoms of heart disease being liable to frequent exacerbations or violent paroxysms is indubitable. These sometimes come on without any known cause; whilst, at others, they may be traced up to some excess in diet or exercise, to mental impressions, or atmospheric changes.

*Prognosis.* In diseases of the heart, the prognosis has lost something of the gloomy characters it possessed in the time of Senac, and even so late as in that of Corvisart. Some of them are, no doubt, essentially and almost immediately mortal; such as rupture of the heart, sudden coagulations of the blood within it, and certain cases of syncope. Amongst those which are in their nature incurable, though not immediately mortal, are to be reckoned induration of the valves with considerable narrowing of the orifices, and certain instances of pericarditis and carditis in the chronic stage. The two last-mentioned diseases, whilst still in the acute stage, though very serious in their nature, are yet, when well treated, by no means so generally mortal as Corvisart supposed; and inflammation of the internal surface of the heart likewise, (an affection which was unknown to that distinguished physician,) though even more dangerous still, if neglected or mismanaged, is amenable to treatment, and in very many cases capable of being completely cured under the influence of active and judicious measures. Hypertrophy of the heart, when unaccompanied by any very considerable dilatation or contraction of its cavities, or serious lesion of its valves; simple thickening of the valves, without any serious obstacle to the course of the blood; and, finally, adhesions, and fibrous or cartilaginous patches in the pericardium, do not enter into the category of diseases necessarily mortal; for, with good management, the individuals labouring under them may have their lives protracted to a very advanced period. The importance of the functions of this organ, and the impossibility of placing it in a state of repose, will always necessarily render diseases of the heart proportionably much more dangerous than those of almost any other organ: still, in a very considerable number of instances, despondency is unwarrantable.

As the diagnosis of heart diseases has of late years made such considerable advances, it was only natural to expect that the treatment should have acquired greater precision, and have become proportionably more successful; and that it should become daily rarer for us to see chlorotic individuals, and others with merely functional derangements of this organ, subjected to bleeding and other prejudicial lowering means, where tonics and a nutritious

diet could alone be of service; or the equally deplorable error committed of treating solely with antispasmodics the palpitations and dyspnoea of patients labouring under an organic affection. The peculiarity of M. Bouillaud's method in the treatment of inflammatory affections of the heart, (and we have seen how extensive a range he attributes to these,) consists in a very free use of antiphlogistic measures, ("émissions sanguines à haute dose,") by means of which, he assures us, he has been successful in an eminent and almost unexampled degree; having latterly been able to save almost all the patients labouring under such diseases, when they applied to him in their early stage. In looking to his cases, however, notwithstanding his assumption of originality in his treatment, the bloodlettings described in them do not strike us as being larger than those usually practised in similar cases in this country, ("trois à quatre palettes,"—twelve to sixteen ounces,) though they are performed perhaps at somewhat shorter intervals, and rather longer persevered in. Of the value of this method, within due limits, there cannot, we conceive, be a doubt, as well from its influence in reducing inflammation generally, as from its being the only method of which we are possessed of reducing the quantity of labour to be borne by this organ, and thus placing it in a comparative state of repose. Half measures, as he justly remarks, only suffer the disease to pass into a chronic condition, with all its unmanageable consequences, which tend to convert life into a lengthened and hopeless disease. He quite agrees with Corvisart in the propriety of limiting within very narrow bounds the employment of Valsalva's and Albertini's method in organic affections of the heart. In the efficacy of mercury alone, or in combination with opium, in controlling inflammation of an ordinary character, and especially that of serous membranes, and of limiting the effusion of coagulable lymph, preventing its organization and promoting its absorption, he does not seem to entertain that confidence which has long been so characteristic of British practice, and which is beginning to be felt latterly also in Germany. He is thus deprived of a powerful auxiliary at that period when bloodletting is no longer admissible. He is not ignorant of, or altogether sceptical as to the influence of this remedial agent, but he does not appear, in his cases generally, to have employed it extensively or vigorously.

The latter half of M. Bouillaud's first volume, and the whole of the second, are devoted to the description of the individual diseases which constitute the object of the work, each of which is illustrated by a copious collection of carefully-given cases; and each set of cases is preceded by some preliminary observations, and followed by a condensed history of the particular disease under consideration, an account of the actual state of our knowledge in regard to it, and the results of the clinical observations and experience of the writer himself. The cases of recovery, as being in some degree

incomplete in an historical point of view, inasmuch as they are deficient in the pathological anatomy of the disease, are kept apart, and reserved for the termination of each article. Cases of this kind are, as M. Bouillaud remarks, too much overlooked by most modern French writers.

*Pericarditis.* Both Corvisart and Laennec, though so peculiarly distinguished by their tact and sagacity in the recognition of diseases, speak emphatically of the doubt and difficulty usually experienced in their attempts at diagnosing this disease. The latter concludes his remarks on the subject by observing that pericarditis is a disorder, the existence of which, during the life of the patient, the most able physicians rather guess at than recognize. It is to the valuable memoir of M. Louis, which first appeared about twelve years ago, that we are chiefly indebted for the great advances which have recently been made towards the establishment of a correct and adequate diagnosis of this affection; and M. Bouillaud conceives that he has been able to contribute somewhat to the completion of this desirable object. Collin, Latham, and Stokes have likewise done good service in the same cause.

Our author has thrown his cases into groups, which are founded on the particular period of the disease existing at the moment of death, or rather on the precise character of the anatomical lesions discovered on dissection; a division which he thinks of more practical utility than the usual one, into acute and chronic.

His first group contains the cases of individuals who died in the period of inflammatory congestion, or in that of effusion or suppuration; the second comprises those in which the absorption of the coagulable lymph had commenced; whilst the third and last comprehends those in which the morbid product had been completely organized, and undergone a transformation into fibro-cartilaginous or osseous tissue. We must content ourselves with noticing the more general observations, although many of the individual cases are extremely interesting and instructive.

Amongst the chronic consequences of pericarditis, the most constant, judging from the cases, consist in morbid alterations of the muscular structure and dimensions of the cavities of the heart, (hypertrophy, dilatation, &c.) and, above all, a diseased condition of the internal lining membrane and of the valves. Cases affording additional evidence to the same effect abound in the works of Corvisart, Tommasini, Hope, &c. There are still, however, writers who affirm that, in certain cases of simple chronic pericarditis, unaccompanied by any lesion of the valves or orifices, symptoms quite similar to those produced by a mechanical obstacle to the circulation occur. Our author has never met with such a one, and doubts altogether the correctness of observation on the part of those who advocate its possibility. He does not deny that a simple chronic pericarditis, even in the absence of any notable quantity of effused fluid, may offer some slight obstacle to the cir-



culatation and respiration, but asserts that any symptoms of this kind so arising are so much milder in degree than those depending on an internal obstruction to the course of the blood, as not to be capable of being confounded with them by any attentive and judicious observer. When the latter state of things, on the contrary, exists, it may, he thinks, be diagnosticated with as much certainty as a stricture of the urethra, or any other simple surgical disease; whereas, the former is much more obscure, and often at first only recognizable from the previous history of the case.

The anatomical appearances found on dissection are detailed at considerable length. The thickening often ascribed to the pericardium in these cases is, for the most part, rather apparent than real, depending on the effusion of one or more layers of coagulable and partially organized lymph over its surface, or on the hypertrophy of the cellular membrane beneath it. The pressure of the effused fluid, if considerable in quantity, or that of accumulated false membranes, sometimes leads to an atrophic state of the heart, —an effect analogous to that produced on the lung by the long-continued pressure of a pleuritic effusion.

Concurrently with the morbid condition of the pericardium, the internal lining of the heart is in many cases red, and somewhat thickened, and that most conspicuously in the *valves*, which are often swollen and infiltrated, or else present fungoid excrescences on their free edge; and coagula of blood, of a date evidently anterior to death, are often found in greater or less quantity within the heart. The muscular tissue of the heart likewise is liable, as well as the serous, fibrous, and cellular tissues entering into its structure, to become hypertrophied in some instances, and soft and friable in others. The softened muscle may assume either a deep red or brownish colour, or else a whitish or pale yellow. It is the latter of these two varieties which has alone been specified by Laennec, and compared by him to the effects which would be produced by maceration, to which it seems in fact to be in some degree owing; and M. Bouillaud remarks, that it is chiefly in those instances of chronic pericarditis where the effusion is almost entirely of a serous nature that it is observed. M. Désclaux, in several instances where he had produced inflammation of the pericardium by artificial means, on dissection of the animals so treated found the internal membrane of the heart likewise red, and the valves (and more especially those of the left side) thickened, swollen, infiltrated, and as it were fungoid on their edges.

The diagnosis of pericarditis may now, according to M. Bouillaud, be formed with certainty in a great majority of cases. The following is a condensed account of the symptoms, physiological and physical, enumerated by him.

1. Pain, more or less acute, below the nipple, or towards the lower end of the sternum, occupying occasionally the whole præcordial region, and sometimes darting towards the axilla and left

arm, and at other times towards the diaphragm, epigastric or hypochondriac regions, and especially that of the left side. This pain, which is sometimes very acute and pungent, like that of pleurisy, is increased by percussion, respiration, and cough: it is sometimes so severe as to render it impossible for the patient to straighten the side, or even to lie on it. In many cases the pain is so obscure as almost to be overlooked, and is only complained of when pressure is made from below upwards in the epigastric region; and in some it is altogether absent. The coexistence of a very acute pleurisy, or of a violent articular rheumatism, has occasionally been sufficient to mask it entirely. Yet it is perhaps the *simplest* form of pericarditis which is the most commonly unaccompanied by pain, and which is hence the most frequently latent, as had been already observed by Laennec; who is here, however, opposed to Corvisart. When the disease originates in rheumatism, pain is sometimes not at all conspicuous, unless a pleurisy coexists, and then it is most violent when the pleuritic inflammation occupies the left side of the chest, and particularly the upper surface of the diaphragm.

2. The beat of the heart is generally increased in strength, and may be either regular or irregular, intermittent or tumultuous. Sometimes, however, the stroke of the heart is almost or altogether imperceptible, which seems to depend on the presence of a very profuse effusion of fluid in the pericardium, by which the sounds likewise are rendered distant and obscure. In one case of considerable effusion it was observed, that the place of the beat of the heart could be changed considerably by varying the patient's posture. When the period of organization is taking the place of that of inflammation, M. Bouillaud has sometimes observed a very singular phenomenon, not hitherto, so far as he knows, noticed by any one else; namely, the second motion of the heart is double, and accompanied by a peculiar, dry, hard sound, (*craquement*.)

3. The prominence of the præcordial region, pointed out by M. Louis, is a valuable sign, which our author has often had occasion to verify.

4. There is an increased extent of dulness on percussion in the præcordial region, which depends partly on the quantity of fluid effused, and partly on the inflammatory turgescence of the heart itself; but the former element has far the greater share in the production of this effect. This is a sign, however, which, like several of the others, can only be expected to be met with in a particular period of the complaint, as it diminishes with the progress of absorption: and in those cases where scarcely anything but a little coagulable lymph is effused, this symptom will hardly, if at all, exist, or only in relation to the turgescence of the heart. In fine, it is only when there is a considerable effusion of fluid that percussion affords us much assistance in the diagnosis of pericarditis; and here, by altering the patient's posture, the level of the dull

sound can sometimes be varied at pleasure. When the quantity of fluid is small, no dulness may be perceivable till we place the individual either erect or sitting.

5. Auscultation, till lately, has done very little for this disease. The sign pointed out by M. Collin, and compared by him to the creaking of new leather, is not admitted by Laennec in his second edition. Its very great rareness may account for this: until recently, as already mentioned, neither Andral nor Louis had ever met with it. Within the last five or six months immediately preceding the publication of the present work, M. Bouillaud has encountered it two or three times; so that from this and from Mr. Mayne's recent paper, in which the evanescent nature of the symptom is dwelt on, we are inclined to think that in many cases it has not been discovered, because not sought for with sufficient assiduity within the short period of its natural duration. It seems to our author to require for its production a peculiar degree of density in the false membranes which rub against each other, and he thinks it may sometimes also depend on the dragging of the adhesions. The sound of friction is very common, and occasionally imitates the *bruit de scie*, or *bruit de râpe*; and M. Bouillaud has himself met with the true bellows murmur in at least six or eight cases.

He does not assent to that part of Dr. Hope's explanation of the bellows murmur, which ascribes it to the increased force of the heart's action; for it is absent in many cases of very violent palpitations, and sometimes present when the heart's motions are comparatively feeble. He fully concurs with him, however, in thinking that it may occasionally be produced by swelling of the valves; being convinced that it depends, for the most part, on the coexistence of endocarditis, and in some instances on the fibrinous concretions within the heart, which are now known not unfrequently to accompany this lesion. The compression of the heart by a large quantity of effused fluid is, he thinks, likewise sufficient to give rise to it.

It is to the general or physiological symptoms of pericarditis that what has been said by authors of the uncertainty of its signs chiefly applies; their variability depending on the degree of intensity of the disease, the number and severity of its complications, &c. Thus the pulse, which is generally much accelerated, may be either large and accompanied with moisture of the skin; or small, hard, and irregular, the skin being remarkably dry. There is occasionally dyspnoea, and an insupportable sense of oppression and anxiety, jactitation, and sleeplessness, and in some instances delirium and convulsions. The face, which may have been pale and sunken at the commencement, if the patient survives a few days, becomes often of a livid or violet hue, and the limbs swell. The suffering induced is often exquisite. Mirabeau, who, as above stated, fell a sacrifice to it in its most violent and acute form, is

said to have entreated his attendants to shorten his life and his tortures by opium. The cases in which there is the most vehement reaction are those which are complicated with inflammation of the pleuræ, especially of that portion of the membrane which lines the diaphragm. The accompanying dyspnœa, when it exists in a very aggravated degree along with faintness and syncope, seems frequently to depend on a large effusion of fluid into the pleuræ or pericardium, and occasionally also on polypous concretions in the cavities of the heart. Frequent vomiting, from sympathy of the stomach with the inflamed organ, is amongst the occasional symptoms of pericarditis; and, in some of the complicated cases just alluded to, M. Bouillaud is disposed to attribute its occurrence to the proximity of the inflamed pleura covering the diaphragm to the peritoneum, and to the reaction of the diaphragmatic nerves on those of the stomach.

None of the symptoms above alluded to, taken *isolatedly*, can be considered conclusive as to the existence of pericarditis; but, whenever an individual is suddenly seized with feverishness, oppression, and anxiety, and there is smallness, irregularity, and intermittence of pulse, together with pain in the præcordial region, extensive dulness on percussion there, and the sound of friction or creaking within the pericardium, we may affirm with confidence the presence of this disease.

*Chronic Pericarditis* is generally only the sequela of the acute form. Sometimes, however, pericarditis bears a chronic stamp from the very first, being unaccompanied by any notable degree of fever, and in many of such instances it is latent; though, if a sufficient degree of care be employed in examining them, they may generally be detected. Thus, if, in addition to the physical signs indicative of effusion, there be some degree of pain or uneasiness in the præcordial region,—a slow fever, with or without exacerbations in the evening and after taking food,—a general sense of oppression,—slight œdema of the face, which is occasionally of a violet tinge, and swelling of the ankles increased by the erect posture, we may conclude the existence of a chronic pericarditis. The existence of adhesions of the pericardium to the heart is not rendered manifest by any diagnostic symptoms, as far as is known to our author. He has not hitherto succeeded in observing that species of undulatory motion which Sanders has asserted is perceptible to the hand applied to the epigastrium in such cases, and which is supposed by him to depend on the alternate drawing up and depression of the diaphragm, in consequence of the motions of the apex of the heart, now closely adhering to the pericardium. He does not at all agree with Corvisart in supposing that these extensive adhesions *must* derange the actions of the heart and diaphragm, and thus lead sooner or later to inevitable death. So frequent is the connexion of this disease with rheumatism, that he believes, as we have already seen, that, of any given number of

acute rheumatic cases, at least one half present symptoms of pericarditis or of endocarditis, or of both united, at some period of their progress. The time of life most subject to it is that between ten and thirty. We agree with M. Bouillaud in thinking that Louis has certainly underrated the influence of cold as an auxiliary cause of this disease.

*Prognosis.* The prognosis in pericarditis generally is considered by our author in a much more favorable light than by almost any previous writer on the subject; and in this he appears to be justified by the frequent traces of it observed on dissection in individuals who have been carried off, long subsequent to its cessation, by other diseases; and he asserts that he has himself succeeded in subduing the majority of cases of it which have fallen under his care during the last few years; and amongst these successful cases there were even several where it existed in complication with pleurisy or pleuropneumonia. The average duration of the disease, when judiciously and successfully treated, may be estimated at from seven to fourteen days. Very violent cases of it may, however, prove fatal in little more than twenty-four hours. Those originating in rheumatism are generally the most obstinate.

*Treatment.* His treatment consists chiefly in free and frequent bloodletting, both general and local. Thus, for example, in the case of an adult in the vigour of life, he orders, on an average, from three to four venesections, to the amount of twelve or sixteen ounces each, within the three or four first days; together with the simultaneous application of twenty or thirty leeches, or cupping to the extent of eight or twelve ounces during the same period. In very feeble patients, where bloodletting seems inexplicable, or has already been carried as far as is safe, we observe that he sometimes employs diuretics or purgatives, but only in that cautious and distrustful manner which characterizes the modern French school. When, notwithstanding all the measures put in practice, the disease unfortunately passes into the chronic stage, local bleedings are still occasionally employed, in combination with counter-irritants, —blisters, cautery, moxa, setons, or frictions with mercurial ointment, tartar emetic, or croton oil. A very low diet is at the same time observed, and tepid baths are employed. When all these fail to produce the absorption of the effused fluid, it has been proposed to attempt the relief of the patient by means of a surgical operation. M. Bouillaud discusses the operation more at large when treating of hydropericarditis. When the motions of the heart are irregular and tumultuous, and hypertrophy of this organ has supervened, digitalis deserves a trial; but, when atrophy of the heart has been induced by the presence of the effused fluid, the employment of the same remedy might be attended with dangerous consequences.

We cannot quit the subject of treatment without once more protesting against his almost total neglect of those potent auxili-

aries, especially in the early stages of the disease, calomel and opium, as there are few inflammations over which their influence has been more satisfactorily made out than in that under consideration; nor are we inclined to think that he does justice to the virtues of the solution of tartrate of antimony, as employed by Laennec and others in serous inflammations, and which, in some of the cases even in the work before us, (the 31st and 32d, for example,) seems to have been productive of signal benefit; whilst, in cautious hands, it very rarely induces that dangerous irritation of the mucous membrane of which he is so apprehensive: and, when we take fairly into consideration the comparative degrees of danger attendant on inflammation of a serous membrane and that of a mucous one,—the importance of the organ enveloped in the former,—the difficulty of getting rid of the effusion by which nature here endeavours, though imperfectly, to relieve herself,—and the dangerous nature of the sequelæ, we become reconciled to incurring the risk which must always be more or less connected with the employment of so powerful an agent. It is, however, chiefly in the very earliest stage that we are disposed to place much reliance on it.

Of the results of his treatment our author gives the following summary. Of eighteen cases of acute pericarditis, twelve were cured, and six ended fatally; but, of these last, three were not treated on his recent system of very free bloodletting, and, of the remaining three, one died of tetanus, quite independently of the pericardial inflammation; so that there were only two deaths to set off against twelve recoveries; and, of these two, one was complicated with a most violent pleurisy, together with pneumonia, splenitis, and erysipelas of the face; and, on dissection, the pericarditis was found to have almost entirely disappeared. In the other case, complications likewise existed. From all this he thinks himself justified in concluding that simple pericarditis would hardly ever be fatal, if early and properly treated.

*Endocarditis.* In the chapter devoted to endocarditis, or inflammation of the membrane lining the cavities of the heart, which M. Bouillaud looks upon as the most original and important portion of his work, he sets out by assuring us that the opinions here put forth in relation to this affection are the result not of any preconceived theories, but of a fair generalization of facts. Its very existence seems to have been unknown to Corvisart and most other writers on the subject of diseases of the heart. Baillie, however, speaks of thickening of the valves, accompanied by the loss of transparency and the assumption of an opaque white colour; of the lining of the ventricles being frequently a good deal thickened, and appearing like a firm white membrane; and adds, "I have also seen the valvular apparatus between the auricle and ventricle in a state of inflammation, and covered with a layer of coagulable lymph; but this I believe to be very uncommon." Burns, too, had found the

internal surface of the right auricle covered with a layer of flocculent lymph; and that of the left, in another case, partly ossified, and lined by a false membrane. Kreysig attributed the frequent formation of polypus concretions within the heart to the existence of inflammation within this organ; an opinion which was subsequently impugned by Laennec, who asserts that inflammation of the internal membrane of the heart and great vessels is infinitely rare. As for the redness occasionally found in them, he looked upon it in a vast majority of cases as a mere cadaveric phenomenon; and especially so where the agony preceding the fatal termination has been greatly prolonged, and accompanied by a state approaching to suffocation, or where there is an evident alteration in the constitution of the blood, or signs of incipient decomposition in other parts of the body. At the very most, he would admit the probability of such inflammation in those cases only where the redness is accompanied by swelling, thickening, or infiltration; whilst he considers the existence of ulceration, or of layers of coagulable lymph, as the only unequivocal proof of its reality. Liquid pus can, for obvious reasons, rarely be expected to be met with in such a situation. Little has been added to our knowledge on this point by Dr. Hope's work; the opinions advocated in it coinciding very nearly with those of Laennec just detailed.\* The extensive investigations made by M. Bouillaud during the last three years enable him to state with confidence, even in opposition to the high authority just cited, that inflammation of the lining membrane of the heart is a very common affection, and at least as frequent as pericarditis itself. Its early stage, he admits, is not attended with such incontestable anatomical evidences as is that of the last-mentioned diseases; but those of the more advanced periods are altogether analogous, and quite as satisfactory. When redness of the membrane in question is detected, he does not by any means conclude from that circumstance alone that there must have been inflammatory action, but is much guided in the formation of his opinion by the symptoms which characterized the disease during life. Of the possibility of such an affection we have positive and altogether indubitable proof in those cases where inflammation of the veins from external injury has gradually extended to the lining membrane of the heart, as well as an instructive and unimpeachable example of the appearances properly characteristic of such inflammation.

In case 43 we have an instance of this disease existing in conjunction with pericarditis and hypertrophy of the heart, with thickening of the valves of the left side. The patient was a young man, of twenty years of age. The leading symptoms were dulness

\* It will be seen in the notice by us of another work by M. Bouillaud, ("Sur le Rheumatisme,") that the frequency of this affection of the lining membrane of the heart had been recognized and publicly noticed by Dr. Watson, of London, previously to the publication of M. Bouillaud's observations on the subject.—Eds.

on percussion and prominence in the præcordial region, together with a vibratory sensation imparted to the hand applied over it. A sound of friction diffused over the cardiac region, and synchronous with the motions of the heart, was also heard; whilst there existed, moreover, a distinct bellows murmur during the ventricular contraction, and this manifested its greatest intensity over the left auriculo-ventricular origin. The pulse was eighty, small, and intermittent; and the face and extremities were oedematous. The patient was easily put out of breath, and complained of a slight ill-defined pain in the chest. The diagnosis formed from this group of symptoms by M. Bouillaud was "acute endocarditis, grafted on an old lesion of the valves of the left side, and general hypertrophy of the heart;" and the appearance after death (which occurred on the fifth day from the supposed commencement of the inflammation of the inner membrane,) fully justified his prediction. About four or five days before the fatal termination, considerable cerebral oppression supervened, with temporary loss of consciousness, convulsions, and tremendous palpitations, the heart striking like a hammer against the side of the chest. On dissection, in addition to hypertrophy and the false membranes of recent pericarditis, the tricuspid valve was found slightly thickened, and a colourless coagulum (which he supposes to have been formed previous to death, namely, at that period when the cerebral symptoms supervened,) occupied both ventricles. The mitral valve was very much thickened, reddish, and of a fungoid appearance, and presented inequalities on its surface, which were obviously of an old date. The columnæ carnæ were greatly thickened, and one division of the valve adhered to the wall of the ventricle. The internal surface of the left auricle was lined with a false membrane, which adhered to it pretty firmly. Two or three spoonfuls of a reddish fluid were found at the base of the brain, and the arachnoid was much injected, and obviously thickened over the left anterior lobe; and the substance of the brain, on section, presented numerous, thickly strewed, bloody spots. The case just detailed being unfortunately a complicated one, as are indeed all those in this section, is far from affording us satisfactory information as to the peculiar symptoms which are to be considered characteristic of endocarditis. In the 50th case, in addition to the redness of the internal membrane of the heart, there existed numerous small ulcerations over the commencement of the aorta and its valves: the symptoms are but very inadequately recorded, and the case was as far from being a simple one as the last, inasmuch as an extensive pleuropneumonia coexisted.

His second division of cases of endocarditis embraces those in a more advanced period, and comprises eleven cases, of which the first four present us with examples of adhesion of the valves to the internal surface of the heart; a species of lesion which, though so important in its effects, (hypertrophy, dilatation, &c.) has hitherto



been almost entirely overlooked. The next three are instances of organized false membranes of various extent on the inner surface of the organ, which resemble in appearance the white patches so often found in the pericardium, and are, like them, of an inflammatory origin. The last four cases are examples of granulations or vegetations on the valves; a species of lesion which becomes of importance as soon as it exists to such a degree as to impede their action or materially to obstruct the orifices.

The third division of cases of endocarditis comprises those in the most advanced stage, the first subsection consisting of those where there exists induration and thickening of the valves, without any notable contraction of the orifices. Where this morbid alteration in the valves is carried to a great extent, it unfits them for the adequate fulfilment of their office, and thus, by permitting regurgitation, paves the way for hypertrophy, dilatation, and other diseased conditions of the organ. In the second subsection are contained cases in which a similar state of the valves exists, but accompanied by considerable narrowing of the orifices. In one of these cases the hydriodate of potass was administered in half-grain doses daily, with a view to combating the symptoms of hypertrophy of the heart which were present; but, as it seemed only to raise the pulse and to exasperate the patient's condition, it was soon abandoned.

Of forty-seven cases of fibro-cartilaginous and osseous induration of the valves, one was in an infant of only ten months old; two were in children of seven and ten years of age; twelve in individuals of various ages, from sixteen to thirty years; fifteen were between thirty and fifty; eleven between fifty and seventy-two; and in three the ages are not mentioned. Thus, out of forty-four cases where the age was ascertained, no less than thirty-three were under fifty years of age; a fact which is certainly rather favorable than otherwise to the theory which insists on the very frequent inflammatory origin of these lesions.

In his general remarks on endocarditis in its first or inflammatory period, which is characterized by sanguineous congestion, softening, ulceration, and suppuration, he states that redness of the membrane lining the cavities of the heart was met with in twelve out of thirteen cases; and he attributes its absence in the thirteenth to the short time the disease had existed, its disappearance under these circumstances being quite analogous to what takes place in regard to slight erysipelatous redness immediately after death. The colour, when present, varies from a slight rose tint to a scarlet, violet, or even a brownish hue, is partial or general, and is frequently confined to the valves alone; and, even if universal, is most intense on them. He believes it to depend rather on a tingeing of the membrane than on true capillary injection; it does not usually penetrate beneath the membrane. It cannot readily be washed away, but yields to prolonged maceration; and M.

Bouillaud has taken occasion to express his dissent from the opinion of M. Cassimir Broussais, who thinks that we may distinguish the tinging of the lining membrane of the sanguiferous vessels which takes place after death from true inflammatory redness, by the effects of maceration. The frequency of cadaveric imbibition, as it is called by Laennec, is fully recognized by our author, especially after typhoid and putrid diseases, as well as when the examination of the body has been postponed till decomposition has commenced. Yet, on the other hand, notwithstanding the high authorities which may be cited against him, he is satisfied of the inflammatory nature of that redness which is discovered, prior to the appearance of any trace of decomposition, in an individual who during life has presented the train of symptoms which he believes to be characteristic of endocarditis; and the fact becomes altogether incontrovertible when the redness coincides with swelling, thickening, and infiltration of the parts which it occupies, or when purulent matter, or a pseudo-membranous effusion, or even colourless and adhering coagula, resembling in nature the buffy coat of the blood, are detected; and especially when this tinting coincides with a similar redness in the blood-vessels, they having been ascertained to be in a state of inflammation by the symptoms during life. A redness similar to that in question was produced, be it remembered, in this same membrane, in those experiments on animals where inflammation of the pericardium had been artificially induced by mechanical or chemical stimulants. The thickening of the membrane is rarely very obvious, save on the valves. Its inflammation imparts to the blood contained within the cavities of the heart a tendency to coagulate; a phenomenon which is also exhibited in the blood contained within an inflamed artery or vein. The fibrinous concretions consecutive to an endocarditis are white, colourless, elastic, and glutinous, adhering to the walls of the heart, and twisted round the tendons of the valves and fleshy pillars. They are, according to our author, in a state of imperfect or incipient organization; and he conceives it possible that small adhering fragments may even become perfectly organized, and so give rise to vegetations or granulations on the valves. The coagula resulting from mere obstruction to the circulation, on the other hand, are soft, reddish, or of a darkish hue, and bear a close resemblance, both as to consistence and colour, to currant jelly.

As to the morbid appearances in the second period of the disease, he remarks that the vegetations or granulations display a peculiar preference for the valves, and especially for their free edges; and adopts M. Laennec's division of them into the globular and the warty. The former, which are soft, easily detached, and of a whitish, yellowish, or reddish hue, would have been better designated by the name of albuminous or fibrinous vegetations. He believes they sometimes originate in the organization of effused and adherent coagulable lymph; being thus analogous to the gra-

nulations met with on the surface of the pericardium, pleuræ, or peritoneum, when in a state of chronic inflammation. The warty excrescences, on the other hand, are of a horny or cartilaginous consistence, and very firmly attached. These vegetations vary in size from that of a grain of millet to that of a small pea, and may exist either separately or congested into groups, so as to assume a cauliflower appearance. They rarely exist as an insulated lesion, being very commonly accompanied by fibro-cartilaginous or calcareous induration of the valves, and, when very large and confluent, necessarily themselves give rise to considerable contraction of the orifices and impediment to the valvular actions.

Of the cartilaginous and osseous degenerations which characterize the third period of the disease, the most frequent seats are the fibrous zones surrounding the orifices of the heart, together with the adjacent valves. The ossifications occasionally assume a very irregular shape, and sometimes penetrate deep into the muscular substance of the heart itself. The diseased valves are in some instances perforated with holes, torn, and reticulated; and, in one of the cases here detailed, one of the aortic valves was found almost entirely detached and floating in the cavity of the vessel; a species of lesion which is by no means unprecedented. The contraction of the orifices is perhaps the most serious of all the morbid alterations consequent upon endocarditis. In its extreme degree, the point of the little finger, or even a quill, can scarcely pass. When the thickened and indurated valves become consolidated with each other, a permanent opening is formed, of a roundish, oval, or slit-like outline; which, in the case of the auriculo-ventricular valve, from its projection into the body of the ventricle, is compared to the glottis, or, when much thickened, to the *os tinæ*. This narrowing of the passages of the heart by chronic inflammation is very analogous to what takes place in other organs of the body under the influence of the same cause,—as in the urethra, and lachrymal and biliary ducts, the œsophagus, the cardia, the pylorus, the rectum, &c.; and the hypertrophy of the heart which succeeds may be compared to the thickening of the muscular coats of the bladder, stomach, and other hollow organs, which arises in such circumstances, from the difficulty of expelling their contents in consequence of the obstruction. The inflammatory origin of the cartilaginous and osseous depositions within the heart, in a great number of cases, is now fully recognized by Andral and many of the best pathologists of the day. All the morbid alterations under consideration are much more common in the left side of the heart than in the right, though they are by no means confined to the former, as Bichat insinuates.

Inflammation of the endocardium is rarely indicated by any peculiar pain; and, when this symptom does exist, it is generally referrible to the coincidence of pericarditis or pleurisy, rather than to the affection in question. There is, however, often a consider-

able sense of uneasiness, anxiety, and oppression, referred to the præcordial region; and this, in extreme cases, is accompanied by a tendency to syncope, the pulse generally becoming very rapid; and it is then for the most part irregular and intermittent. Palpitations are commonly present. The impulse of the heart against the side of the chest is usually very strong, and is felt over a greater extent than natural; which M. Bouillaud ascribes to the turgescence of the organ, under the stimulus of the internal inflammation. The extent of præcordial dulness on percussion is found to be somewhat increased: the dulness arising from this cause may, however, be distinguished from that depending on a simple effusion into the pericardium, by observing that, in the case of endocarditis, the beat appears superficial, being visible and perceptible to the hand; whilst, if there be considerable effusion, on the other hand, it is deep-seated, and scarcely at all to be recognized by the sight or touch, at least when the patient is in the supine posture.

The *bruit de soufflet*, or bellows sound, which accompanies endocarditis, and masks one or both of the normal sounds, will vary in intensity, he conceives, according to the degree of swelling of the valves, and the abundance of the fibrinous or pseudo-membranous matter formed within the cavities of the heart. The pulse is often not in harmony with the heart's action,—the former being small and feeble when the latter is violent and tumultuous; a discordance which he ascribes to the presence of a considerable mass of fibrinous concretion in the heart, and to swelling of the valves and consequent obstruction of the orifices; and it is in such instances that we meet with extreme paleness of countenance, anxiety, and jactitation, swimming in the head, syncope, &c.; and, in the advanced stage of such cases, the venous circulation becomes impeded by the same circumstances, as is evinced by the bluish or livid colour of the face and extremities, together with an cedematous state of the same parts: and he is even inclined to think that the cerebral symptoms occasionally met with, the sudden loss of consciousness, the slight convulsive motions, the stertorous respiration, and foaming at the mouth, are the result of the congestion of the veins of the brain thus induced. When the obstacle to the circulation is considerable, but only then, great dyspnoea is present, attended with extreme restlessness and uneasiness in every position.

The above description of the symptoms is applicable to those cases only where the disease exists in a very acute and extensive form. When it is only partial, subacute, or chronic, its signs are much less marked, and to recognize it is, as he confesses, a matter of considerable difficulty, and requires great attention to the examination of the patient. The decidedly acute form can hardly be confounded with any other affection, except it be pericarditis; but our author admits that there are occasionally cases where he remains in doubt between these two diseases. Practically speaking,

however, the difficulty is of little importance. When the pericarditis is accompanied with a copious effusion of fluid, the mistake, he thinks, could hardly be committed, if we attend to the diagnostic symptoms mentioned above. Where, however, such effusion is not present, the difficulty becomes seriously increased. Our own impression is, that, in the present state of our knowledge, the distinction will often be impossible. The friction between the opposing layers of the pericardium, when roughened by the presence of adherent coagulable lymph, produces a morbid sound much resembling that heard when the valves are inflamed and thickened. If, however, this sound cease on change of posture, as is sometimes the case, our author is then inclined to refer it to the pericardium. The existence of "*frémissement cataire*," with intermittence or irregularity of the heart, are also signs of great value in diagnosing a narrowing of the orifices. The triple or quadruple motion of the heart, already alluded to as one of the most remarkable interruptions of the natural rhythm of the organ, is dependent on this narrowing, or on induration of the valves; and the dulness of sound on percussion, which arises in the advanced period, depends on the dilatation and hypertrophy to which the lesions just mentioned eventually give rise. It is to auscultation chiefly that we must look for aid in our attempts to form the above diagnosis. The bellows murmur, the saw and rasp sound, are here signs of the first importance: out of above one hundred cases, some modification of these sounds was detected in all save one, and that one was not adequately examined. Induration of the valves is rarely accompanied with pain. In some instances a slight uneasiness or weight is felt at the præcordia or epigastrium; in nearly all, palpitations and a tendency to syncope are complained of. During the palpitations the pulse is of extreme frequency,—from 140 to 160 in a minute.

When, therefore, an individual presents to our observation a permanent "*bruit de soufflet*" in the præcordial region, a rasp-like or a sawing sound, whilst a vibratory sensation is imparted to the hand, and tumultuous action of the heart or palpitations and irregular pulse exist, it is in the highest degree probable, if the disease dates back some months or years, that we have to do with induration of the valves and narrowing of one or more of the orifices of the heart; and this becomes certain when to these local signs the general symptoms of impeded circulation are added; as, for instance, dilatation of the superficial veins; pulsation of the jugulars, synchronous with the pulse, from reflux from the right ventricle, in consequence of inadequacy of the tricuspid valve; violet tint of the complexion; congestions of the lungs, liver, mucous membrane, brain, &c.; passive hemorrhages or serous effusions; dyspnoea on slight exertions; cerebral derangements, loss of sleep, frightful dreams, &c.

M. Bouillaud next investigates the question as to whether it be

possible to decide in which of the orifices of the heart the narrowing is seated; a point, the determination of which being, as he justly remarks, more curious than useful, we shall not at present dwell upon.

The symptoms arising from the adhesion of the valves to the parietes of the heart are much the same as those from contracted orifices; the reflux producing very similar local symptoms, and an embarrassment of the circulation to a nearly equal amount. A hardened and distorted condition of the valves is perhaps usually in such cases a preliminary stage, which gives rise to reflux of the blood; and this, in its turn, by throwing the valves back, facilitates their adhesion. He endeavours, indeed, to discriminate between the symptoms of these two morbid conditions, though, we think, not very successfully. Thus he believes that, in the case of adhesions, the *bruit de soufflet* is of a fuller character, and less grating or rasp-like; that the beat of the heart is less irregular, and the *frémissement cataire* less marked; that the pulse is not so small; and, lastly, that the dyspnoea, the venous and serous congestions, exist in a less degree.

The vegetations on the valves, when they do not interfere with their action or notably diminish the orifices, are attended by no very obvious symptoms; yet M. Bouillaud is inclined to suspect their existence when there remains a well-marked *bruit de soufflet*, unaccompanied by any other symptom.

Endocarditis is induced by the same kind of causes as pericarditis. It may occur either as a primitive or as a consecutive disease. The affections on which it is most apt to supervene are pericarditis, pleurisy, phlebitis, and acute rheumatism. In the acute stage, it may terminate fatally in a very few days; and one of the principal causes of death here is supposed to be the extensive formation of sanguineous concretions within the heart. If actively and properly treated, it will generally end favorably within about a week; but, if it pass into the chronic state, its duration is indefinite: yet even here the lesions thus produced become sometimes apparently stationary, and, under judicious management, life may be prolonged to a very advanced period.

On its treatment we shall not dwell, as it is essentially the same as that of pericarditis; or, if there be any difference, it is only that copious and repeated depletions are still more imperatively called for here, in order to prevent the coagulation of the blood, the deposition of false membranes within the heart, and permanent derangement of its mechanism. If it passes into the chronic stage, moderate local and general bloodletting, counter-irritation, diuretics and purgatives, digitalis, baths, absolute repose, and a very low scale of diet, are our chief resources. With regard to digitalis, we may remark that our author seems to have a peculiar preference for the endermic method of exhibiting it, denuding the skin by a blister, and then sprinkling from eight to twenty grains of the

powder daily over the exposed surface. The syrup of asparagus is also amongst his favorite remedies.

*Carditis.* Carditis, or inflammation of the muscular and cellular tissues of the heart, is the subject of the next section. The existence of any well-authenticated and well-described instance of a general inflammation of the heart was doubted by Laennec. Partial inflammation, characterized by abscess or ulceration, is, he admits, of occasional occurrence. Ramollissement of the heart is placed by M. Bouillaud, as well as previously by Corvisart, amongst the occasional consequences of inflammation; though he is far from asserting, as Laennec insinuated he did, that ramollissement of this organ can have no other source. The induration of the muscular tissue of the heart has always been reckoned amongst the possible consequences of its inflammation. No authentic instance of gangrene of the heart is yet upon record. Carditis so rarely exists in an uncomplicated form, that Corvisart never met with an example of it. He has given, in addition to three cases of his own, six from Meckel, Storck, and Hildanus; and in all the latter pericarditis coexisted. M. Bouillaud has collected together several additional cases of a similar kind: amongst these is one by Dr. Latham, of a patient who died in two days of an acute inflammation of the heart. On dissection, the heart was found of a reddish brown colour, and much softened. On making an incision into the walls of the ventricles, there oozed out here and there between the muscular fibres innumerable drops of pus; a case which sufficiently proves both the extent to which inflammation may affect the heart, and that ramollissement is really one of its terminations. Mr. Stanley's case of true carditis was an equally decisive one, and must be in the recollection of most of our readers.

M. Bouillaud arranges his cases of carditis under the three following heads: 1st, those terminating in ramollissement or suppuration; 2d, those terminating in ulceration, perforation, and rupture of the walls of the heart, of the columnæ carneæ, tendons, or valves; 3d, those ending in ulceration, with the consequent formation of aneurism; 4th, those leading to induration in various degrees up to a fibro-cartilaginous or cartilaginous consistence, or even to perfect ossification; as in Burns' remarkable case.

A general carditis has never yet perhaps been met with in its simple state, but always complicated with inflammation either of the inner or outer membrane of the heart, or both. According to our author, ramollissement and suppuration of the heart are similar lesions, differing from each other only in degree. The colour of the softened structure is either reddish or yellowish white; the first indicating an earlier, the second a more advanced period of the affection, or that where purulent infiltration has taken place, analogous to the two successive conditions of the lung in pneumonia, or of the psoas muscle in psoitis. The purulent matter may be either encysted or infiltrated, and may make its escape either

towards the external or the internal surface of the heart, though he is not aware of any recorded instance of the latter.

Ulceration of the heart, together with the aneurismal tumours and perforations which are consecutive to them, are much more frequent in the left than the right side of the organ. According to M. Breschet, the apex of the left ventricle is the most usual seat of these aneurismal cysts; but M. Reynaud has thrown some doubt on this generalization, as he, on the other hand, has found that, in seven out of thirteen cases analyzed by him, the disease did not occupy the apex. Perforation of the heart is much less apt to occur from rupture of these aneurismal tumours than by simple ulceration; the firm adhesion and thickening of the two layers of the pericardium forming, for the most part, a bulwark in the former case. When perforation does at length take place, it is generally rather by rupture than the absolute penetration of the ulcer. If the external wall of the heart be thus perforated, instant death, by bleeding into the pericardium, is the result; whereas, if the opening affects the septum, the mixture of the black and red blood is the only immediate consequence.

Corvisart was unable to fix on any diagnostic symptom by which to distinguish carditis from pericarditis; and neither Laennec nor our author has been more successful, which, inasmuch as the former is scarcely ever met with uncomplicated, is not surprising. The symptoms of aneurismal tumours of the heart, of which about eighteen cases are on record, are equally obscure, and the affection has not yet in any one instance been detected.\* Yet M. Bouillaud considers that, with the joint aid of percussion, auscultation, and the touch, carefully and skilfully exercised, it is not altogether to be despaired of. Thus, it is evident that such lesions must produce a degree of dulness on percussion in proportion to their magnitude; that they may, in some extreme cases, eventually raise the corresponding portion of the thoracic parietes; and it is probable that an anormal sound may be produced by the entrance and expulsion of the blood through the opening of communication with the heart.

*Hydropericardium.* This disease is judiciously divided into active and passive; a distinction neglected by Corvisart. The latter being the mere result of an obstacle to absorption and to free venous circulation, in consequence of the primary disease of the heart, is not dwelt on. The former was considered by Laennec, as it is also by our author, as being extremely rare; and, if we

\* In the case of the celebrated Talma, though he was attended by several of the most eminent medical men in Paris, the existence of this disease was never once suspected till revealed by the dissection. An aneurismal tumour, capable of containing a small hen-egg, was found at the apex of the heart: it communicated by an aperture, or cartilaginous ring, of about an inch in diameter, with the left ventricle; on the outside of this cyst the two pericardial layers were adherent, and formed the chief portion of its parietes. It was filled with fibrinous coagula, arranged in a succession of thin concentric layers. The immediate cause of his death was a neglected stricture of the rectum.



leave out of view those cases where the serous effusion accompanies or follows a purulent or pseudo-membranous one, and where other evidences of pericarditis coexist, they have been unable to adduce any indubitable instances of it. The quantity of fluid which should be considered sufficient to constitute a dropsy of the pericardium seems quite unsettled: Corvisart fixes on six or seven ounces as the minimum. Laennec has laid down nothing very definite on the subject. Bouillaud thinks that Corvisart has placed the mark too high, as he conceives that the quantity of water which can be accumulated within this membrane, as the mere effect of a prolonged agony previous to death, rarely exceeds one or two ounces. When, however, hydropericardium is well marked, the quantity is often so considerable as to leave no difficulty, as it amounts occasionally to two or three pounds; and, in one case of Corvisart's, it amounted to no less than eight pounds. In opposition to Laennec, our author asserts that the heart has occasionally, in such cases, a whitish macerated appearance, from the long-continued contact of the fluid. He differs also from the same distinguished writer in respect to the difficulty of recognizing its existence during life, and believes that it may be detected by its physical signs in nearly every case where the effusion is somewhat considerable. The sounds of the heart in such instances become distant and obscure, and its beat, if felt at all, is (as Corvisart has remarked,) very variable as to the place where it is perceptible; being sometimes on the right and sometimes on the left side of the chest, and occasionally disappearing altogether when the patient is lying in a supine posture. As for the fluctuation seen by Senac, and felt by Corvisart, M. Bouillaud's own experience rather inclines him to doubt the propriety of placing it amongst the symptoms of this disease. In the only instance where he felt anything like fluctuation, he had reason to think it depended on the application of the heart itself, in its contraction, to the parietes of the chest over an unusually large surface, in consequence of its displacement by a tumour within the left side of the thorax. The prominence of the præcordial region is insisted on, and with reason, by Corvisart, who first noticed it. Its treatment, when it is discovered, will be the same as that of other active dropsies,—bleeding, diuretics, purgatives, &c. With regard to the propriety of paracentesis thoracis in any case of this disease, the data hitherto known to M. B. are insufficient to enable him to decide; and, as to the still bolder proposition of Richerand, to inject the pericardium with a stimulant fluid, in order to produce, as in the parallel practice in hydrocele, an artificial inflammation of the serous membrane, adhesion, and a permanent cure, he is still less in a condition to be justified in countenancing it.

*Hypertrophy of the Heart.* This affection, which was considered by Corvisart in a point of view subservient to its dilatation, as is evident from his nomenclature of heart-diseases, has been placed in a somewhat original and truer light by Bertin, who divides its

varieties into three kinds,—the simple, the eccentric, and the concentric. The last of these seems to have been altogether unnoticed previously, though in reality it is less rare than the simple variety.

According to M. Bouillaud, hypertrophy of the heart hardly, if ever, exists in an insulated form; being almost always complicated with chronic pericarditis or endocarditis, or their consequences; and, where the valves and orifices of the heart are in a healthy condition, it does not give rise to any such train of symptoms as has been ordinarily but erroneously ascribed to what was formerly called active aneurism of the heart. The connexion of cerebral apoplexy with hypertrophy of the left ventricle, first perhaps pointed out by Legallois, and powerfully advocated by Richerand and Bricheteau, is well made out by numerous cases in the present work. Of fifty-four cases of hypertrophy here detailed, eleven (that is, above one-fifth,) present the coincidence of cerebral hemorrhage or of softening of the brain; and this in individuals of various ages, from twenty-five up to seventy-nine. M. Bouillaud falls into an error when he supposes that he is the first to have noticed the frequent coexistence of ossification of the cerebral arteries with apoplexy, as it is mentioned very expressly, and at some length, by Dr. Baillie, who views these phænomena in the relation of cause and effect. The opinion was subsequently alluded to, and we think successfully combated, by the late Dr. Cheyne, in his valuable treatise on Apoplexy.

Destruction of the eye by inflammation has been placed by Testa and Corvisart amongst the occasional consequences of organic diseases of the heart; but there is but a single case as yet, as far as we know of, adduced in support of the opinion. Gangrene of the limbs has also been ascribed to the same cause; but, in all the cases which have fallen under M. Bouillaud's notice, the gangrene has appeared to originate, not as a direct consequence of the heart-disease, but from obstruction of the artery leading to the part by means of a coagulum: whether, however, this state of the blood be the cause or the consequence of the gangrene, admits, we think, of question. In the 131st case, both the vein and the artery were thus obstructed. Though hypertrophy of the right ventricle is acknowledged to be very much rarer than that of the left, Laennec was evidently in error when he states that it never reaches a high pitch, as M. Bouillaud has mentioned three cases in which the parietes of the right ventricle varied from eight to sixteen lines in thickness. The concentric hypertrophy, or that with diminution of the cavity affected, may be explained by supposing it to originate in inflammation of the inner membrane of the heart, which will probably affect most especially the more internal muscular layers, and thus lead to their disproportionate development, and consequent encroachment on the interior of the ventricle. When, on the other hand, there is great dilatation, together with

hypertrophy, it is usually dependent on obstacle to the circulation from a diseased state of the orifices, and is generally first apparent in the cavity just behind such obstruction. So frequent is the coincidence of hypertrophy with chronic pericarditis or endocarditis, and their consequences, that, when the latter exist, we may almost unhesitatingly conclude that the former is present also. Thus, out of thirty-three cases of these membranous inflammations given in the present work, which terminated by induration, thickening, &c., hypertrophy was not absent in a single one. To the circumstance of the thickening of the muscular structure of the heart being so much more conspicuous than that of the membranous, in their respective chronic states, may be ascribed the almost exclusive degree of notice which the former has met with: and yet there are many analogous instances where the inflammation of the lining membrane of other hollow muscular apparatuses (as the stomach, intestines, bladder, &c.) eventually gives rise, by means of long-continued irritation, to hypertrophy of the adjacent muscular fibres; and the analogy might be pursued still further, by observing that, in these cases likewise, an obstruction to the free course of the matters contained within them often exists, and forms a link in the chain of cause and effects, giving rise in some cases to dilatation, and in others to contraction.

The idiopathic signs of hypertrophy of the heart consist in the permanent augmentation of the force and extent of its pulsations, and a consequent augmentation, according to M. Bouillaud, of the intensity of the double sound. If to these we add an increase in the extent to which dulness is perceptible on percussion in the præcordial region, and occasionally a notable prominence in the same part, he thinks we have enumerated all its proper signs. The whole mass of the heart, instead of the mere point, seems to come into contact with the side of the chest at each beat. The pulsations in hypertrophy, it is further stated, are irregular, save in such cases where contraction of the orifices or a nervous affection of the heart coexists with it. Muscular substance being a bad conductor of sound, when the thickness of the walls of the heart is excessive, (twelve to fifteen lines and upwards,) and the cavities are at the same time diminished, the double sound is, he confesses, rendered somewhat obscure, and as it were smothered; but, where this thickening is moderate, and the capacity of the cavities is not lessened, or is, on the contrary, increased, these sounds become stronger and clearer, and are audible over a greater extent of the chest than natural; the sound produced by the impulse of the heart against the side having somewhat of a metallic ringing character. The bellows-sound, it is asserted, is very rarely present in cases of simple hypertrophy, and then only during the existence of palpitations. So very rare is it in such cases, that its existence should, in almost every instance, lead us to suspect some complication of disease about the valves or orifices. The extent to

which dullness on percussion is heard is in the joint ratio of the hypertrophy and the dilatation. The prominence of the præcordial region, which is sometimes obvious to the eye and touch, and susceptible of accurate measurement, was, we believe, first noticed by our author, who gives several cases where it existed, and in which there was evident increase of space between the ribs of the left side. The pulse in the simple and in the aneurismal variety of hypertrophy of the left ventricle, in their uncomplicated state, is strong, large, vibrating, and regular. In the concentric variety, or that with diminution of the cavity, the pulse is vibratory, but small and cord-like. In all there is a tendency to active hemorrhages; the animal heat is slightly increased, the eye brilliant, and the colour florid, with occasional flushings. Where, however, complications exist, the above characters of the pulse are not to be expected; and it is in the latter cases only that passive serous and sanguineous effusions and congestions take place.

In uncomplicated hypertrophy of the heart, the respiration is not materially affected till the organ has acquired such a volume as to encroach on the lung; yet the great majority of writers on cardiac diseases have ascribed to hypertrophy, or active aneurism, such symptoms as the following; a violet hue of the face, and general congestion of the venous capillaries; passive dropsies and passive hemorrhages, dyspnoea, &c.; but these are in reality only so many signs of mechanical obstacle to the circulation, and indicate disease in the orifices, valves, &c.

In the present state of our knowledge, M. Bouillaud thinks it impossible to discriminate hypertrophy of the auricles during life; yet it so generally accompanies that of the ventricles, that he asserts we may, for the most part, conclude the existence of the former when we are able to recognize that of the latter. There seems to be a considerable probability that pulmonary apoplexy is occasionally dependent on hypertrophy of the right ventricle; but the three cases given in support of this view in the present work cannot be considered as at all conclusive in themselves, inasmuch as hypertrophy of the left ventricle coexisted in two of them.

In two cases detailed by our author, hypertrophy of the heart appears to have assumed an acute form, the period of obvious symptoms not exceeding three or four weeks; the patient in one instance being twenty-two, and in the other about forty years of age: but these cases, as it is very prudently admitted, want the additional confirmation of future ones, as they were not, as is obvious on their perusal, unexceptionable; and M. Bouillaud himself is far from having made up his mind as to the certainty of the disease ever having so very rapid a course.

In his views of the treatment of hypertrophy there is nothing particularly new. As to bloodletting, he lays it down as an approximative rule that it should be repeated three or four times, together with one or two cuppings of from eight to twelve ounces. In

*digitalis*, (the true opium of the heart, as he terms it,) administered in the endermic manner, he seems to have much more confidence than most French practitioners.

*Atrophy of the Heart.* M. Bouillaud brings forward but a single case, that of a woman about sixty years of age, the beat of whose heart is described as having been extremely feeble, and very limited as to the extent in which it was perceptible to the hand. Its sounds were so weak as to be audible only in the intervals of the respiration: there was no bellows murmur. On dissection, the organ was found to be a full third less than the natural size, or about equal to that of a child of ten or twelve years old; wrinkled and withered, as it were, on the surface, where were observed some whitish patches, indicative of an old pericarditis. The left ventricle could scarcely contain a pigeon's egg, and the thickness of its walls did not exceed three lines; the cavity of the right ventricle was rather larger, and the walls were about one and a half lines thick. Burns has mentioned a much more marked case than this, where the heart of an adult did not exceed that of a new-born infant; and another, where the heart of a woman, of twenty-six years of age, was about equal in size to that of a child of six years. Amongst the local causes of this affection are enumerated the pressure of effused fluids within the pericardium, and contraction of the coronary arteries by disease; and, among constitutional causes, whatever tends to produce marasmus of the body at large, tubercular and cancerous diathesis, ulcerations of the intestines, &c., can scarcely fail to effect some alteration in the size of the heart.

The *Neuroses of the Heart* have met with little attention hitherto. Corvisart omits them altogether; Laennec dispatches them in a few pages; and Andral, in that part of his *Medical Clinique* treating of diseases of the heart, has treated them with as little ceremony. Our author commences this part of his subject by the consideration of nervous palpitations, which are so frequent in young persons addicted to excessive study and late hours, as well as in those who make an abuse of stimulants or indulge in sexual excesses; also in those of a chlorotic or anæmic habit, from whatever cause arising. The palpitations arising from the last-mentioned condition are daily confounded with organic diseases of the heart; to the infinite prejudice of the unfortunate patients; a mistake arising from the circumstance of chlorotic individuals being, as well as those labouring under organic affection, liable to dyspnoea and a sense of smothering from any exercise which is in the least fatiguing, as ascending a stair, &c. The diagnosis is the more important, as the treatment of the two diseases is diametrically opposite. This is a point to which we beg to call the most earnest attention of our readers, more especially our junior brethren, who are favourers of auscultation. We meet with no more common case of error in diagnosis and in practice than this; and we know

of few more injurious, both to the system of the patient and the reputation of the practitioner. One half of the cases brought to men who have got a name for the treatment of diseases of the heart consist of these pseudo-cardiac affections. M. Bouillaud asserts that the chlorotic palpitations are for the most part unaccompanied by any well-marked bellows murmur in the heart itself; whilst, at the same time, this sound is almost constantly present in the great arteries, (carotids, crurals, &c.)

There is another variety of palpitations, which may be called the rheumatic, as they make their appearance in conjunction with wandering rheumatic pains about the præcordial region, darting from thence to the left arm: they are sometimes accompanied by slight intermittence of pulse, and cause considerable alarm to the sufferers, though in other respects they appear in high health. They are no more to be confounded with the palpitations originating in pericarditis or endocarditis of an acute rheumatic character, than is a pleurodynia with a pleurisy, being quite as distinct in their nature and tendency. Nervous palpitations are sometimes, no doubt, continuous; yet far more frequently they are, like most other nervous affections, intermittent. Andral and others are of opinion that their frequent recurrence may eventually give rise to organic disease, though there may have been nothing of this in the commencement; and, while in the stage of transition, the difficulty of making up one's mind as to the true nature of such cases is, it must be confessed, extremely difficult. By frequent examination with the stethoscope, especially in the absence of the palpitations, we must endeavour to ascertain whether the valves of the heart do their duty,—whether the orifices are in the natural condition, the walls hypertrophied or thinned,—as well as to satisfy ourselves, by the sight, touch, and percussion, whether there be enlargement of the organ. The absence of venous congestion, and of violet tint of the face, dropsies, &c., though the disease be already of some standing, adds to the probability of its being a mere nervous derangement. Yet, with all these aids, there are cases, as M. Bouillaud himself is obliged to confess, where there is very great difficulty in forming a correct opinion: namely, those complicated ones in which there exist simultaneously palpitations depending on organic disease and palpitations of a nervous nature; a kind of case more frequent, he believes, than has generally been suspected. M. Bouillaud insists earnestly on the importance of the physician using all his efforts to tranquillize his patient's mind, and relieve it from the vague apprehension of an organic disease.

With regard to *Neuralgia* of the heart, on which some stress has been laid by Laennec, M. B. is sceptical as to whether pains of the kind described have really their seat in this organ. That the pains are neuralgic, is unquestionable; but he thinks it more probable that they have their seat in the phrenic or intercostal nerves, and that in some cases it extends to the pneumogastric,

cervical, and brachial plexus. Certain cases of nervous asthma, as well as of angina pectoris, he conceives may have this source. As to spasm of the heart, a disease likewise alluded to by Laennec, he believes it to be altogether an imaginary one, as there is nothing in the symptoms attributed to it indicative of true spasm. That this organ is sometimes liable to such an affection, in its more ordinary sense, is, however, we think, fully borne out by the group of morbid phenomena generally known under the name of Angina pectoris.

*Change of Dimensions in the Cavities.* In the section treating of changes in the dimension of the cavities and orifices of the heart, our author remarks that the contraction of the latter has been dwelt on by Corvisart and previous writers; but that the diminution of the cavities themselves had been quite overlooked, till Bertin pointed it out. Dilatation with thinning of the walls, or passive aneurism, as it was called in the old nomenclature, is much rarer than that accompanied with their thickening, or active aneurism. With regard to partial dilatation, or false consecutive aneurism of the heart, as it has been termed by M. Breschet, he remarks that, although insulated cases of it had from time to time been recorded, it is only lately that it has been studied with the minute detail which it merits. These aneurismal tumours are sometimes, but improperly, named *true* aneurisms of the heart: they are in reality, in almost every case, what we have called them above, *false consecutive* aneurisms; for the rupture of the interior layers of the parietes of the organ is one of their fundamental characters: but, as there is no rule without its exception, these ruptures have been, it is admitted, in some few cases, preceded by a partial dilatation. The situation in which this partial dilatation has been most frequently presented to M. Bouillaud's observation is the pulmonary portion of the right ventricle.

Dilatation of the orifices of the heart is no less frequent than that of its cavities, and very often accompanies the latter. The principal cause of both lies in obstacle to the circulation, and the consequent accumulation of blood and distention of the containing parts. The auricles are more prone to such dilatation than the ventricles, because their muscular parietes, being thinner, have less power of resistance; and for the same reason the right ventricle, when compared with the left, is as it were predisposed to it. The cavities immediately behind the obstruction are, generally speaking, the first to dilate; but this is not universally the case; for sometimes, in consequence of the unequal power of resistance of the different cavities, that which is nearest to the obstacle is not dilated so soon as one of the more distant ones. Thus, where there is induration of the aortic valves, with contraction of the orifice, the left auricle may become dilated before the left ventricle. Moreover, in consequence of the connexion and communication between the different cavities of the heart, any great obstruction to the

course of the blood, wherever situated, may at length induce a general dilatation of all the cavities of this organ, and even of several of the larger vascular trunks. Amongst the more conspicuous exciting causes of dilatation of the heart are to be reckoned violent exercises, and all such occupations as make large demands on muscular exertion, passions of the mind, distortion of the vertebral column, and all the malformations tending to curtail the natural dimensions of the chest; and even, as our author subjoins, compression of the trunk by injudicious clothing. But, of all the causes, the pathological condition of the valves and orifices alluded to above is indubitably that which plays the chief part in its production.

We are under the necessity of passing over several chapters, partly because our limits will not allow us to notice them, but chiefly because they possess more of pathological than practical interest. All are, however, well worthy of perusal, and indeed demand the attentive study of every practitioner, who would be master of this important class of affections. The diseases which we omit are the following:—Syncope; Wounds of the Heart; Rupture of the Heart; Displacement of the Heart; Hernia of the Heart; Congenital Malformations of the Heart. The last class comprehends the following varieties: 1. dextrocardia, or transposition of the heart; 2. communication between the right and left cavities; 3. acardia, or absence of some of the parts constituting a normal heart; 4. bicardia, or increase of the number of normal parts; 5. malposition of the great vessels.

*Polypi of the Heart.* In an appendix, the oft-mooted question of the coagulation of the blood in the cavities of the heart, and the formation of polypiform emanations during life, is discussed. These polypi are divided into the recent or the amorphous, and those which have been formed a longer time before death, and give traces of incipient organization. Above twenty supposed cases of the latter are to be found in the course of the present work. As to the former, M. Bouillaud believes that the majority are found during or only shortly prior to the agonies of death, at the same time admitting that some may be of later origin; and that these are not very readily distinguishable from the others. When the coagula are colourless, very adherent, and closely twisted round the columnæ carneæ, there is reason to believe them of a date considerably anterior to death. Several of the additional cases of polypous concretions given in this appendix are taken from M. Legroux's work, published about eight or nine years ago, and little new light has we think been thrown on the subject since. M. L.'s account of their several stages is as follows:—first, the concretion forms, acquires a certain general density, and afterwards becomes softened in its centre, so as to form a kind of cyst filled with a sanious fluid, which subsequently assumes a purulent character; the pus is absorbed, the cyst becomes adherent to the adjacent parietes of the containing



cavity, and penetrated by vascular ramifications. One of the best-marked instances of organized fibrine within the heart occurred to M. Senn, in the case of a girl of eighteen, in whom the right auricle was in great part filled by a concretion, in the centre of which there were vesicles full of a semi-concrete liquid. This polypiform concretion was traversed by an infinite number of vessels, some of a bright red, others of a dark colour. It extended into the superior cava, right subclavian and right jugular veins, &c. with the walls of which it seemed to be connected by a continuity of tissue. It is in the right side of the heart that these concretions most frequently occur, and the auricles are more commonly their seat than their respective ventricles. M. B. attributes the first of these circumstances to the course of the blood being more easily embarrassed in the right cavities, and partly also to the frequency of inflammation of the veins, and its propagation to the right side of the heart. He is inclined also to ascribe some influence to the greater disposition to coagulate in venous than in arterial blood. The anatomical character of these sanguineous concretions differs much, says M. Bouillaud, according to the period of their formation, and as they are mixed or not with pus or pseudo-membranous matter. The amorphous recent concretions do not differ essentially from the coagula formed in blood taken out of the body. The organized concretions, again, present very different appearances according to the date of their formation. In the first degree of organization, they are whitish, elastic, slightly adherent to the walls of the heart, and especially to the columnæ carneæ and tendons of the valves, round which they are often twisted. They are like the buffy coat formed on the surface of inflammatory blood, or like the false membranes of serous tissues in a state of incipient organization, and manifest various intermediate degrees of tenacity as they pass from the gelatinous to the fibrous condition. In a still more advanced state, they adhere by true cellular membrane to the parts on which they are formed, and into which they are as it were grafted, being penetrated by blood-vessels, and gradually acquiring additional firmness till they come to resemble in their structure fibrous polypi or fungous vegetations. He corroborates Legroux's account of their occasionally containing pus in their interior, so as to resemble cysts. They sometimes, as we have just seen, adhere firmly to the valves, and may thus lay the foundation of organic derangement to the form or structure of these important parts; but to the production of this effect the presence of inflammation would appear to be necessary. It is difficult to say whether these concretions are formed at the expense of the blood contained in the heart or are a secretion from the inflamed tissue. M. Legroux and M. Bouillaud incline to the latter opinion. The purulent matter occasionally contained in their interior is believed by the former of these gentlemen to be the product of their own secretion; but from this opinion our author dissents, believing that it comes rather from the

lining membrane of the heart, or that it has been transported thither from some other part of the body, and has subsequently caused the formation of a clot in which it is at length enveloped; for it is found, even at that early period when the containing coagulum affords us yet little or no trace of organization.

The principal symptoms to which polypi of the heart can give rise are connected with the obstruction thrown in the way of the circulation by their occupation of the cavities and orifices of the organ. Their causes are either mechanical, viz. such as oppose the free current of the circulation, or chemico-vital.

The blood drawn from a patient in the agonies of death, or with great obstruction of the cardiac orifices, is very prone to coagulation, escaping from the vein in a thick semi-concrete state; and it is just in such cases that coagulation is most apt to take place within the heart, and give rise to those sudden and unexpected deaths so common in cases of heart disease. Of the chemico-vital causes of such coagulation, inflammation of the lining membrane of the heart is one of the principal; and the introduction of foreign substances into the torrent of the circulation, as pus, for example, in another. In the majority of the cases in the present work, where these fibrinous concretions were not connected with any mechanical obstacle to the circulation, they coincided either with an idiopathic inflammation of the heart or with an inflammation of some other organ reacting on the heart and entire circulation, the blood being then peculiarly prone to coagulate firmly, and form the buffy coat. These polypiform concretions, acting as obstacles to the circulation, and occurring especially in the right side of the heart, will necessarily, when in any considerable quantity, tend to impede the return of the blood from the different organs,—the brain, liver; or hence apoplectiform symptoms, serous effusions, &c.; and, as but a small quantity of the blood can reach the lungs, so as to be duly aerated, the phenomena of asphyxia will also occasionally manifest themselves. When their seat is in the left side, in addition to the above, dyspnoea will be a prominent symptom, inasmuch as the blood will be admitted with difficulty from the pulmonary veins, and congestion of the lung be thus effected. When the polypi interfere with the play of the valves, their effects will be the most distressing. The most remarkable of their symptoms are a tumultuous action of the heart, with dulness and diminution of the natural sounds; a bellows murmur, occasionally of a sibilant character; great anxiety; venous congestions followed by a comatose state and stertor, and occasionally preceded by convulsions, smallness of pulse, and coldness of the extremities. The sudden occurrence of such a group of morbid phenomena in the course of a pericarditis, or endocarditis, may sometimes enable us to announce their formation; and so also in chronic diseases of the heart, which had previously presented none of these violent symptoms. The prognosis in these cases is necessarily bad, and most so when the disease they accompany is

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in itself of a dangerous nature.—Treatment is almost out of the question.

In this article, which is rather an abstract than a review of M. Bouillaud's important work, we have endeavoured to place the actual state of knowledge in respect to cardiac disease before our readers, as fully as our limited space would admit of. We cannot take leave of the author without once more intimating that this, his greatest production, fulfils the promise of his earlier doings, and confers infinite credit on his zeal and industry. Like Morgagni's and some other standard books of former days, the one before us contains such a mass of carefully noted cases and dissections that whatever may be eventually the fate of the hypotheses in it,—(and they form after all, but a very inconsiderable portion of it,) or whatever future changes may take place in the theoretical parts of our art generally, this work must long keep its ground, and be held in high estimation as a rich magazine of well-observed pathological facts.

## ART. II.

*A Treatise on Diseases of the Eye and its Appendages.* By RICHARD MIDDLEMORE, M.R.C.S., Surgeon to the Birmingham Eye Infirmary.—*London*, 1835. Two vols. 8vo. pp. 1644.

THE gradual increase of institutions for the cure of ophthalmic disease, throughout the country generally, and the setting apart of particular wards in the larger metropolitan hospitals for the same purpose, have produced the most beneficial effects upon the state of our ophthalmic literature, and greatly advanced the character of British medicine and surgery. This progressive improvement, dating it from the foundation of the London Eye Infirmary, has wiped away the stigma of empiricism with which we were justly chargeable in the treatment of these maladies, prior to that period. It is true we had to boast of Cheselden, Pott, and Hey: they were, however, the stars which made the general darkness more perceptible; but it was impossible that the isolated efforts of even such men, brilliant though they were, could suffice to lay the permanent foundation of true principles, until the erection of schools of ophthalmic practice. To John Cunningham Saunders the profession owe this benefit; and it is to be regretted that Mr. Middlemore should class the founder of British ophthalmology with such practitioners as Ware, Adams, or Curtis. It is not correct to say that Saunders limited his practice, "professedly" or "secretly," to the management of ocular maladies. It is from the very circumstance of his education as a medical practitioner,—his official connexion with the anatomical school of St. Thomas's Hospital,—and his increasing avocations as a general surgeon, up to the period of his early and lamented death, that we are indebted for the successful

transfer of the treatment of diseases of the eye from the exclusive oculist to the educated general practitioner of medicine or of surgery.

Having said thus much out of justice to the memory of one to whom science owes its best praise, we turn to the review of the volumes before us.

The introductory lecture of Mr. Middlemore, "somewhat rambling and discursive" as it is, and as the author very candidly admits it to be, gives an amusing sketch of the state of the science prior to the nineteenth century. At that period Germany had far outstripped us in the race; but, emulating the industry of that laborious nation, and commencing the pursuit on the true principles of physiology and pathology, we have successfully regained the ground, and are now running a fair and even course. What England was thirty years since, France now is, as regards this department of medical knowledge; and it is especially creditable to the exertions of our own country to observe the high rank her ophthalmic literature has obtained amongst our continental neighbours, while the compliment lately paid us in calling to their assistance the practical skill of one\* of our most able and experienced surgeons does equal honour to their liberality and our own advancement in this department of our art.

After giving the chronology, as it were, of the science, intermixed with some fair and judicious criticism, Mr. Middlemore proceeds with general observations on the pathology of the organ of vision. He observes, "it is by due reference to the anatomical qualities of the part diseased, and the symptoms which attend, and the other events and circumstances which accompany similar morbid affections of the same texture in other parts of the body," that ophthalmic disease ought correctly to be estimated. This is the true philosophy of the science: it is by treating maladies of the eyes by constitutional remedies that the veil is torn from the charlatan, and exposes the fallacy of his "miraculous unguents and infallible collyria."

The study of this class of diseases may, moreover, be rendered of the highest utility in the investigation of the pathology of the more obscure affections of other viscera; for, small as the organ of sight may be, compared with the *organismus*, it should be recollected that it contains all the constituent tissues of the body. In this organ we are enabled to trace the origin, progress, and results of inflammation. The mucous and serous, the fibrous and cellular membranes are displayed before us. We can trace the commencement of an inflammatory attack, the impairment or destruction of the tissues involved, the action of the remedies, and the result of the disease or of our opposing remedies. This cannot be without its applicability in the wide range of hidden disease. The student cannot behold the treatment of ophthalmic maladies without being

\* Mr. Lawrence.

perpetually reminded that similar tissues elsewhere are subject to like attacks, and curable by the same general measures.

Mr. Middlemore's volumes are strictly devoted to the pathology and therapeutics of eye diseases, mixed up, however, with some anatomical details, which we shall deem it our duty to notice. Upon this important subject we have had, within the last four or five years, the works of Mackenzie, Lawrence, Guthrie, and Walker. These productions are all of them highly creditable to the authors individually, and reflect much lustre on the profession to which they belong: the two former ones especially evince great powers of observation, patient and laborious and learned research, originality of thought, and a clear and lucid style. The success which attended these publications might have deterred, for a time at least, any new competitor for ophthalmic laurels from appearing in the field. We have scarcely, however, had breathing time before a rival has started up in the shape of two huge volumes, a great part of which is made up of quotations, or rather lengthened extracts, from a host of writers, whose names and ideas are used with so much freedom as often to leave us at a loss for the author's own opinions.

We are, however, unwilling to criticise this work by a studied comparison of it with others; neither is it just so to do. It must stand or fall by its own merits; and it is only when we see Mr. Middlemore attempting to depreciate others, that we feel called upon to add our voice in condemnation of such a practice. We are therefore exceedingly sorry when we see the flippancy with which Mr. M. attacks the opinions of those with whom he may happen to disagree; as, for instance, in his remarks on Mr. Guthrie's observations respecting the insensibility of the eye, and the surgical liberties that may be taken with it.

Another cause of complaint we have against Mr. Middlemore is his too great haste to appropriate to himself certain methods of treatment and explanatory views of obscure pathology. At page 70, vol. i., he appears very anxious to take the merit of having introduced the sulphate of quinine as a remedy in scrofulous affections of the eye. He does not give us the date of his discovery; but, if we remember rightly, in November, 1828, Dr. Mackenzie noticed the subject in the *Glasgow Medical Journal*, where he states the beneficial effects of quina in phlyctenular ophthalmia, strumous corneitis, and ophthalmia tarsi. We should hardly have noticed this fact, had not Mr. Middlemore evinced considerable soreness at some criticisms of the editor of the *Medico-Chirurgical Review*. Mr. M. should remember that, however elegant a form of tonic the sulphate of quina may be, and by whomsoever introduced, the principles upon which the practice is founded were known and pursued long before his time. Drs. Fordyce and Fothergill, in the first volume of the "*Medical Observations and Enquiries*," recommended the use of bark in

cases of strumous inflammation of the eyes, as long back as the year 1755.

The explanation which Mr. Middlemore gives of the sympathy existing between the lachrymal gland and the conjunctiva is almost identical with that given by Mackenzie in the first edition of his "Practical Treatise." (Compare p. 259-260 of Middlemore with Mackenzie's first edition, p. 394-5.)

We now turn, with much greater pleasure, to those portions of these volumes wherein we have little fault to find, and much to praise. The pathological portion of the work opens with the subject of "Conjunctivitis," and, as that malady is familiar to every one, an extract will enable our readers to form a more correct estimate of the author's powers of description, than if we were to select some of the more obscure, and because obscure perhaps more interesting, forms of disease.

We have first an outline of acute conjunctivitis, light and sketchy; the more prominent symptoms are then filled in,—the redness, pain, lachrymation, the extension of the disease to other tissues, and the results, are all amply dilated on. Then follows the diagnosis, which we give entire.

"*Diagnosis.* The only disease of any other parts of the eye with which acute inflammation of the conjunctiva is liable to be confounded is sclerotitis. You would distinguish the disease under consideration from inflammation of the sclerotica by the colour of its vessels, which, you know, are bright scarlet, whilst those of the sclerotica are of a purple appearance, from their situation: they are placed upon and within the conjunctiva, and may be moved with it upon the eyeball; those of the sclerotica are deeper seated, the conjunctiva may be moved upon them, whilst they only follow the movements of the eyeball:—from their arrangement; they are first perceived at the periphery of the eyeball, and are most abundant there; those of the sclerotica are first observed near the margin of the cornea; and, finally, the vessels of the inflamed conjunctiva are less direct, more tortuous, than are those inflamed sclerotica.

"In saying that the vessels of the inflamed conjunctiva are first perceived at the circumference of the eyeball, and subsequently extend to and ramify around the margin of the cornea, I ought to mention that this is usually noticed, but sometimes the progress of the disease is too rapid; the symptoms of the affection are established too suddenly to furnish us with an opportunity of doing more than just notice that the largest vessels and the greatest number of them are placed at the periphery of the globe, at an early period of the malady. When the disease is fully developed in its most acute form, the conjunctiva presents one uniformly and equally red surface; or, rather, it presents a vividly bright vermilion appearance. You will also distinguish inflammation of the conjunctiva from scleritis by other symptoms; for, in the latter disease, the dryness of the eyeball, the uneasiness produced by moving the lids upon it, and the pricking or scratching sensation, as though sand were beneath the lids, is either not noticed or scarcely at all perceived; whilst, in conjunctivitis, these symptoms are present to a distressing extent; and, on the contrary,



the pain, the sense of tension and intolerance of light, are peculiarly severe and annoying in inflammation of the sclerotica, whilst they scarcely provoke the slightest uneasiness in conjunctivitis.

"I have already told you that inflammation of the conjunctiva may extend to the sclerotica; and it is right that you should be informed that, although I am describing the diseases of each texture of the eye separately, yet you will not always find them so limited in the course of your practice; but, if I were not to adopt this plan, you would be quite unable to comprehend and distinguish the numerous maladies to which the organ of vision is liable. If I first describe the symptoms of each form of disease of the separate textures of the eye, and subsequently point out those which are usually associated with its more common combinations of morbid affection, you will be prepared, I trust, when you witness such combinations of disease, to attach to each malady the symptoms which belong to it, to select the symptoms connected with separate maladies, and attach to each of them their proper share in producing the aggregate disease, so as to distinguish the predominant affection, and educe the comparative date and severity of each. I repeat, then, that when the conjunctiva is acutely inflamed, the sclerotica is very liable to participate in the disease, chiefly from its contiguity and the vascular connexions subsisting between these parts; and, in such case, you will be able to distinguish the various circumstances connected with the colour, situation, arrangement, and so on, of the two sets of vessels, with all the advantages of contrast. In such an instance it will be scarcely possible to confound the moveable, prominent, scarlet vessels of the conjunctiva with the fixed, purple, covered vessels of the sclerotica.

Having said so much respecting the means of distinguishing the inflammation of the conjunctiva from that of neighbouring parts, it will only be necessary, in order to complete the subject of diagnosis, that I should just mention that the other varieties of conjunctivitis are distinguished from that under consideration, by the quality or quantity of the discharge proceeding from the inflamed surface or by other sufficiently distinctive symptoms, so that they are only liable to be confounded by an extremely ignorant or a culpably inattentive person." (Vol. i. pp. 45-48.)

The symptoms in the above-quoted extract are minutely detailed and judiciously discriminated, and the allusion the author makes to the plan he has chosen to follow affords the best apology for the size and diffuseness of the work.

Six pages are devoted to the causes of acute ophthalmia, and then follows the treatment. All this is ably done, and Mr. Middlemore here takes the opportunity of speaking more at large upon the subject of the measures necessary to subdue ocular inflammation generally. Thus, the much-abused or misused bloodlettings pass under review. Several long quotations from various authors are introduced; Vetch, Lawrence, Thomson, Langenbeck, Mackenzie, and others are adverted to; yet little practical is deduced from all this. We are informed, indeed, what others recommend, we see the discrepancies of opinion, but are left to collect the author's opinions from the following reference to his own practice.

"It must be understood, that no directions you can receive from books or lectures will enable you to decide upon the quantity of blood it may be necessary to withdraw in every case of acute inflammation of the textures of the eye; there must be a demand, a very great demand, on your own judgment.

"I cannot tell you that the loss of so many ounces of blood will be necessary to subdue a certain degree of inflammation of the conjunctiva, and that the abstraction of so many more or less number of ounces will be required to remove inflammation of the sclerotica, and so on, with regard to the inflammation of the other textures of the eye. However, the following directions comprehend the rules which regulate my own practice: you must be guided by the effects of bleeding upon the constitution, as well as by its influence upon the eye; you must bleed repeatedly in a very short space of time, if symptoms are severe; for, as I may again remark, unless you abridge the duration of acute inflammation, unless you check its progress with promptitude, interstitial deposition may take place, and you may experience the disappointment, and your patient may sustain the injury, of recovering the form of the eye perhaps, but with the loss of the transparency of its pellucid textures, after having cheerfully submitted to that treatment, which, if carried a slight degree further, would have perfectly preserved both its figure and its transparency." (Vol. i., pp. 71-2.)

From what we have here quoted it is evident that Mr. Middlemore does not fear the use of the lancet, although he does not run into those lamentable extremes by which the patient has often been drained almost to the last ounce of his blood, and left obnoxious to all the forms of cachectic disease. We are convinced that "venesection ad deliquium" is, as a general rule, deserving the highest degree of censure. In no case of ophthalmic disease that we are acquainted with, not even in the purulent ophthalmia of adults, can a bleeding to fifty, sixty, or more ounces be productive of anything but mischief. The inflammation is not subdued by such treatment, but only converted into a passive process, often equally formidable and more unmanageable than the original attack. The chemosis, in such cases, far from diminishing, appears to bury and constrict the cornea more closely as the powers of the patient fail under the lancet; and that transparent tissue sloughs as much from the vitality of its structure being reduced by loss of blood as by strangulation of its vessels. We observe, however, by the description of the treatment of purulent ophthalmia in Mr. Middlemore's work, that he adopts a cautious plan of procedure, although his rules of practice are not altogether clearly explained.

The subject of Iritis is, upon the whole, well treated of by the author. From amongst the general symptoms described at page 618, we would strike out Nos. 2, 3, and 4; because dimness of vision, intolerance of light, and increased lachrymation are equally symptoms of other inflammations of the eye. Nos. 1, 5, and 6, will then stand as general characteristics of idiopathic iritis. The detail of symptoms is very good; but, when upon the subject of

the contraction of the pupil, Mr. Middlemore starts into a theoretical discussion, which he must pardon us if we state rather obscures than throws light upon the matter. Until the question of how the iris is moved,—if by muscles, to what laws they are subjected, &c.,—be finally settled, it is obvious that any attempted explanation of this abstruse point would be nugatory. We cannot indeed see that “useful objects are attained by this contraction of the pupil” (p. 625,) in iritis: on the contrary, if the pupil remain in this condition for but a very short space of time, we have to fear all the disastrous consequences of inflammation of a serous tissue,—effusion of lymph, permanent irregularities or occlusion of the pupillary aperture. On the other hand, it is of the highest importance not only to dilate the pupil with belladonna, in order to obviate these results, but also to effect that dilatation in the highest possible degree, since the distance of the margin of the iris from the anterior surface of the crystalline capsule is greater in proportion as it is opposite to that point where the lens is bevelled off to its sharp circumference. Thus, when the lens is kept in a medium state between contraction and dilatation, adhesions may still take place; and, although a permanent aperture be secured for the transmission of the rays of light, still, the freedom of motion being destroyed, the vision is proportionally impaired.

In speaking of the cure of iritis, the author gives a clear and full explanation of the means to be most certainly relied on; as bloodletting, mercury, and the local application of belladonna. With these remedies in our hands, there are perhaps few cases of iritis that may not be said to be perfectly manageable, provided always the case comes under observation before irreparable mischief be done by the long continuance of adhesive inflammation. We are inclined to think with Dr. Farre, whom the author has himself blamed, that with mercury alone the disease may be effectually cured. Dr. Farre stated, in the introduction to Mr. Saunders’s posthumous work, at the very place which has called forth Mr. Middlemore’s expression of “injudicious,” as applied to Dr. F.’s opinion that his views of the action of mercury were “the result of a fair trial.” We have seen, in the practice of the surgeons of the London Ophthalmic Infirmary, repeated instances where iritis of the severest kind was treated, and with success, solely by the use of calomel and opium, accompanied by the application of the extract of belladonna. We would further undertake to say, of all the cases occurring there, either of acute or syphilitic iritis, that greatly more than three-fourths of them are so treated. The extensive opportunities enjoyed by the medical officers of that institution render the result of their practice of more than ordinary weight.

On the subject of Glaucoma, Mr. Middlemore quotes Mackenzie’s observations on the pathology of this disease, evidently from the first edition. We would wish to refer him to the second edition of

that valuable work, wherein he will find the subject somewhat differently treated, especially as regards the morbid condition of the crystalline lens: indeed, what Mr. Mackenzie expressly says he considers a chief cause of the glaucomatous appearance, namely, the amber or reddish brown colour of the posterior lamellæ of the lens, is wholly omitted. We do not think, either, that Mr. Middlemore is justified in affirming that "Mackenzie differs from almost every preceding writer in stating that the well-known appearances of glaucoma (those peculiar appearances as respects colour and opacity which are presented on a close examination of the eye,) are independent of any opacity of the vitreous humour and change in its colour." Transparency may exist with change of colour; and Mr. Mackenzie expressly says, this fluid was perfectly pellucid, colourless, or *slightly yellow*.

In the description given of Senile Glaucoma, Mr. Middlemore's explanation is almost identical with that given by Mr. Dalrymple, in "The Anatomy of the Human Eye," with the exception that Mr. M. does not allude to the diminished secretion of the pigment, which, to a great extent, accounts for the reflecting instead of absorbing surface at the bottom of the eye.

"The vitreous body is more fluid and less transparent in the aged than in the adult. Owing to the diminished secretion of the pigment and its lighter colour, combined with the opaline tint of the lens; the pupil, instead of presenting the intense blackness of the earlier periods of life, is often, in age, of a greenish hue. This has frequently been confounded with the disease called "Glaucoma," while the thinness and loss of energy in the retina itself aids the deception by furnishing, on the consequent failure of vision, one of the symptoms of that distressing malady. I am inclined, however, rather to look upon such appearances, in very old people, as indicative of a natural change in the organ, than as a true morbid affection, unless accompanied with other and unequivocal symptoms." (*Anatomy of Human Eye*, 1834.)

After stating his belief that the changes which produce what is called senile glaucoma are the natural alterations of the ocular tissues, (which ought to take it out of the catalogue of diseases,) Mr. Middlemore builds up a theory upon very slight foundations, and which we think he will have some trouble to substantiate, viz. "that the secretion and absorption of the vitreous humour are equally prevented," and that *for a useful purpose*: or, in his own words, to prevent "the flaccidity and flattening of the globe," and consequent failure of the focal powers.

As an operating surgeon, Mr. Middlemore must, however, have remarked there is no want of secretion of the aqueous fluid in old persons, at least, after the operation of extraction, as is attested by numerous cases where that mode of removing cataract has been performed on patients between the age of eighty and ninety years,

or even upwards. It is not because we deny secretion to be feeble in the aged, that we do not agree with the view Mr. M. takes of these changes, but on account of the reason given for it. If it were to prevent certain inconvenient results that secretion and absorption are stayed in the eyes of old people, senile glaucoma would be a constant occurrence and a beneficial change, and not an affliction.

We have but little space remaining to extract from this voluminous work, (so large indeed as to defy systematic criticism,) yet we wish to allude briefly to the subject of dislocation of the lens, for the purpose of introducing a very interesting case which concludes the section. The causes, symptoms, and appearances of this affection or accident are well described. Reference is made to three cases of displaced crystalline, where that body retained its transparency; the question, indeed, whether the lens should or should not become opaque in its abnormal situation, according to our present imperfect knowledge of its organization and nourishment, is very wisely not discussed. It is well known that, in the vast majority of instances, the lens, when dislocated, acting as a foreign body, produces great excitement in the eye, and sets up a degree of inflammation that, uncontrolled, inevitably terminates in total blindness. Nor is this all: the agonizing pains, both in the eye and surrounding the orbit, call imperatively upon the surgeon for some instant relief. This, we should naturally conceive, might be effected by removing the cause, by extracting the lens; but Mr. Middlemore justly observes, that great care and discrimination are necessary to determine how far the symptoms are dependant upon the presence of the crystalline or upon the inflammation "excited by the original injury, of which injury the dislocation of the lens is merely a part." For our own opinion, we believe it is advisable to remove the lens, if possible, before inflammatory action be set up; and it may, moreover, become a question whether, when such action is excited by the injury itself, the removal of the foreign body would not tend in a great measure to allay that disturbance which its presence only aggravates. If the operation be determined upon, we should not wish to follow Mr. Middlemore's directions of carrying the knife *behind the lens*, inasmuch as the iris is more likely to be wounded by the edge of the instrument, which is then concealed from our view by the interposed body; and because of the difficulty of insinuating the knife between it and the iris without implicating the latter structure. The section, we hold, should always be of the upper half of the cornea; since the lens will, in that case, gravitate to the bottom of the anterior chamber, leaving a freer space for the passage of the knife.

The case which concludes the chapter is of considerable interest, one in which the lens remained some months in its dislocated position without its transparency becoming impaired. We have at this moment under our observation a case in which the lens remained

for upwards of three months in a similar transparent condition, and ultimately only begun to become opaque from accident. This was a case in which, as in Mr. Middlemore's patient, the lens appeared to have been spontaneously displaced; at least, rather the result of internal action than external violence.

"*Case.*—A man, who had some years previously lost the sight of his right eye, discovered a considerable confusion of vision in the left, which came on without any assignable cause, and soon increased so much as to render him unfit to follow his employment. At this period he applied to Mr. Smith, of Southam, for relief. On an examination of this recently affected organ, it was found that the lens had become dislocated, and floated about sometimes in the posterior and at others in the anterior chamber. The patient remarked on this point, that, when he stooped forward, the lens projected; that is, it fell into the anterior chamber, and pressed back the iris, producing slight uneasiness: it was, in fact, quite under the influence of gravity; it was also seen that the crystalline humor preserved its figure, magnitude, and transparency, and it was said by one gentleman who examined the case, to resemble a drop of clear oil floating on water. In this condition he came to the infirmary, three months after he had first discovered the malady; he had then no useful degree of vision, although his sight varied much, and chiefly in accordance with the position of the lens. As there was no inflammation present, as the displaced lens excited no irritation, and as the eye was considered to be affected with incipient amaurosis, my colleagues thought, and I was of the same opinion, that it would be quite wrong and unnecessary to extract the crystalline body." (Vol. ii., p. 49.)

Mr. Middlemore has not pursued a course with the anatomy of the eye similar to that adopted by Mackenzie and Lawrence, inasmuch as there is no introductory chapter expressly devoted to the subject. It is true, we do not think that a sufficient degree of knowledge can be acquired by the student from the space usually given to the anatomical details in works essentially pathological; but, as far as the subject is treated of by Mr. Middlemore in the poems attached to each section of disease, we feel that he falls very short of the accuracy and minuteness of the above-mentioned authors. We fear, indeed, that he has studied the writings of the illustrious anatomists whose discoveries he mentions at page 6, to very little purpose. Had he been more acquainted with their works, he would have been aware that, with but one exception, none of the parts in question (*Liquor Morgagni*, *Canalis Petitiona*, *Foramen Soemmeringii*, &c.) received the appellations by which they are now known, from the discoverers themselves. The modesty which accompanies true merit was (Ruysch excepted,) a distinguishing characteristic of these men. It was the consenting voice of their contemporaries or successors that rendered their names as imperishable as the science they adorned.

Mr. M.'s ideas as regards the anatomy of the internal membranes of the eye seem to us inaccurate and unscientific. "The choroid,

(he says,) is placed between the medullary or pulpy layer of the retina and the sclerotica," (page 770;) and again, when speaking of the retina at page 789, "It (the retina) consists of two parts, the medullary, *which is opposed to the choroid*, and the membranous," &c. From this it is clear that Mr. M. is a sceptic as relates to the tunica Jacobi, especially as he goes on to observe, in a very depreciating tone, "that, in addition to this vascular layer and its medullary layer, Dr. Jacob has fancied he has discovered a third layer or membrane situated between the medullary layer and choroid." But we must remind Mr. Middlemore, that this fancy of Dr. Jacob is participated in by all the best anatomists of Europe, and that it was by the unanimous voice of scientific men that the honour was accorded of affixing Dr. Jacob's name to this tissue.

Mondini's membrane of the pigment has met no better fate at Mr. Middlemore's hands; for we find him expressing a belief that, after having washed off the pigment, (and with it, of course, Mondini's membrane,) the choroid "more nearly resembles the serous than any other class of tissues." We should be glad to know wherein the similitude consists. Where is there any reflexion of that membrane? Where the closed sac of serous tissues? What serous membrane in the whole body is found secreting, as he asserts the choroid does, a dense, opaque, and pasty pigment?

Without going further into this subject, we may say, from the specimens before us, that we are sorry Mr. M. introduced any anatomical details whatever, as they neither add to the value of his book, nor to his reputation as an accurate or minute observer.

In conclusion, we beg to express our regret at having had occasion to dispraise so many portions of this work. Notwithstanding the sanction it has received from the College of Surgeons, who awarded the Jacksonian prize for the year 1831 to what, we conceive, was the original draft of this treatise, we are bound in all fairness to state that we are convinced it would be advantageous to condense the two volumes into one. This might be easily done by expunging many of the long extracts from other writers, and by avoiding a prolixity that is often very wearisome to the reader. There is a quaintness of expression, also, that frequently grates harshly on the ear; although we would not quarrel with the style, were the matter conveyed original and to the purpose.

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## ART. III.

*Analekten ueber Kinderkrankheiten: oder Sammlung ausserwählter abhandlungen ueber die krankheiten des kindlichen alters, zusammengestellt zum gebrauche für praktische Aerzte. Heft I.—VIII. Stuttgart, 1834-1836. 8vo.*

*Selections in Children's Diseases; or, a Collection of Select Treatises on Infantile Diseases, for the use of practical Physicians. Parts I.—VIII. Stuttgart, 1834-1836.*

THIS is a very valuable and interesting publication, on a plan which we should be glad to see followed in this country, on the present or on other classes of diseases. It consists of numerous monographs which have originally appeared at different times, but all of comparatively recent date, in distinguished practical works, in transactions of societies, journals, &c., in the German and other languages, and most of them by authors of distinction. The foreign articles are translated, and all appear in small neat parts, or volumes of about 150 or 160 pages each, at irregular but short intervals. The first part came out in October 1834 and the eighth is now before us. The articles are, on the whole, remarkably well selected, and bear the names of the most eminent practical writers on the diseases of children in all the countries of Europe, more particularly, however, of Germany and France.

It being our object, on the present occasion, rather to call the attention of our readers to the work than to attempt any analysis of its contents, we shall merely notice a few of the papers contained in it: as, however, we may return to the subject at some future time, we shall restrict our observations to the earlier numbers.

In the 1st vol., page 51, is a well-arranged paper by Dr. Vogel, of Rostock, on the "general Diagnosis of Infantile Diseases," which the author commences by combating the opinion of the obscurity of this class of disorders, and the great difficulty of detecting them. It is undoubtedly true that our knowledge is less advanced on this subject than in many others, yet it is also true that a medical man, with the requisite tact, may arrive at results nearly as accurate, though at the expense of more labour. But, to do this, he must be aware of the value of each sign and symptom,—and their import in children differs from the same in adults,—also quick to detect any variation from the normal condition of any organ. Besides, many of the most important and certain *indicia* in grown persons are either more difficult to obtain in children, or of more questionable validity when obtained. We must therefore seek for more sure guides and other sources of information, and these to a great extent will be found in the general conformation of the body, the equitable adjustment of the different systems, or the predominance of one or more over the rest,—the various temperaments,—the character of the circulation generally,—the disposition to spasmodic action,—the general and local irrita-



bility,—the condition of the vital parts, &c. These, with other circumstances of a more local character, are to be taken into consideration, in order to form an accurate diagnosis of any particular disease. Dr. Vogel has taken some trouble in pointing out the anatomical characteristics of different parts of the body in children where they differ from those of the adult; and as this is a very important item in the knowledge requisite, we shall quote his own words.

“1. The distance from the sternum to the pelvis amounts, in the newly-born, to nearly a third part of the whole length of the body; in the adult, only to about one-fifth. At the period when this distance is the greatest in the child, the middle part of the belly is more developed than at a more advanced age. It is also deeper antero-posteriorly than subsequently, when the spine becomes more evidently curved. It is broader, too, because the ribs project more laterally.

“2. The pelvis is much smaller in children, and the os sacrum is curved, with its under part approaching to the os pelvis, the body of which is very short and flattened. The tubera ischii are scarcely as yet developed.

“3. Hence, almost all the abdominal viscera are contained in the middle of the belly, until the pelvis and the space under the short ribs are increased.

“4. The stomach lies nearly perpendicularly, and reaches to the navel; its great curvature is oblique towards the left side, and its smaller curvature towards the right side.

“5. In consequence of this position, the omentum is situated more towards the left side; and it might happen to be mistaken for an obstruction and induration of the colon.

“6. The liver (of a very large size) lies nearly in the middle of the belly, with its anterior border stretching nearer to the abdominal parietes. The left lobe is much larger than in the adult. It is about the fifteenth year that the liver ascends, and then, when the body is recumbent, it is nearly hidden by the ribs. Lastly, the stomach assumes its proper position, and all the other parts their destined relations.

“7. The duodenum lies almost entirely behind the stomach, and its curvatures are very distinct.

“8. The entire mass of the intestines is situated much higher, and pushed more forwards, than in the adult. Should mesenteric scrofula or physconia occur, the child seems to consist almost wholly of belly, and the heart is so pushed up that one can hardly see it.

“9. The spleen is placed more towards the middle of the abdomen, and can be distinctly felt under the short ribs; whereas, in the adult, it lies on the left side in the left hypochondrium.

“10. The urinary bladder is situated almost entirely above and out of the pelvis, and can be plainly discerned when distended with urine.

“11. The uterus and ovaries are above the pubis. The left ovary is ordinarily higher than the right.

“By degrees these circumstances change, and the different organs assume their ordinary positions; but it is easy to see the importance of knowing these peculiarities in our diagnosis of local disease.” (Vol. i. p. 53.)

Much more than merely anatomical knowledge is, however,

necessary to apprehend these diseases. It is absolutely requisite that the physiology of each organ be understood, in order to detect the commencement of morbid action. The functions of the brain and nervous system,—the vascular system, both of white and red blood, the lungs, the abdominal viscera, the skin, the cellular tissue, &c., must be carefully studied; and, when once our information on these points is extensive and accurate, we shall have but little difficulty in appreciating deviations from health, even in children, where we cannot avail ourselves of their intelligence. All this is dwelt upon in detail by M. Vogel, and we must refer our readers to his paper: but there is one point we cannot pass over so slightly. In the phenomena of functional disturbance, to which we have just referred, a few points excepted, there is no very wide difference between similar processes in children and in adults, but in one particular, and a most important one, where morbid action is in question, childhood wholly differs from more advanced age, viz. that it is a period of development. Not only have the various organs their ordinary functions to fulfil, but they have also to provide for the collective development of the body. The consequence is, that we find an increased activity of certain organs and an exaltation of vitality generally. The irritability and sensibility are so exquisitely marked at this period, and the general and local excitement so intense, that but a very delicate line is the limit of health and disease; and we cannot be surprised either at the frequency of certain affections, or at the slight causes which suffice to produce them.

“The most important epochs of infantile life must be considered, in order to enable us to comprehend the entire subject, so as to obtain a successful general diagnosis of the diseases of children. These are *the periods of development*, during which the vitality in certain hitherto quiescent and powerless organs is exalted by the increased physical and dynamical growth and development, and which has a most powerful influence upon all the functions of the body and upon their mutual relations.

“One of these important periods, which is fatal to many children, is the time of dentition. Since it ordinarily preserves its regular stages, we may conclude, from calculation, that many accidents are attributable to this cause, even when it does not announce itself by local symptoms.

“In all processes concerned in the evolution of the body, the vegetative power or vital action of the organs concerned is necessarily exalted. This shews itself by increased vascular action in the part, afflux of the fluids,” &c. (P. 62.)

After noticing the sympathies of distant organs with morbid action, and pointing out the necessity for their careful investigation, our author proceeds to consider the causes and course of the more ordinary diseases, especially with reference to food, medicine, air, clothing, exercise, &c. Considerable stress is laid upon the cry of children, as assisting our diagnosis, and Billard's distinction is adopted. We may observe the cry which takes place during expiration, which is more or less clear, sounding and continuous, and the

cry during inspiration, a kind of echo of the former. The characters of these two cries are very different, and have different significations. The younger the child, the shorter the echo, which becomes more audible with advancing years, and the intensity of which appears in inverse proportion with that of the cry of expiration. If the suffering be acute, and the child fresh and strong, the cry of expiration predominates; but, if exhausted or fatigued, the cry of inspiration, as in sighing or sobbing. It is probable that a reference to Dr. Calvert Holland's views of the relations of expiration and inspiration would throw light upon this subject. In very young children, crying is generally (but not always) accompanied with tears. For some ingenious views on this subject we must refer to the work of Billard before noticed.

The remainder of the essay is occupied with considering the physiognomy of children as a ground of diagnosis, and as we proceed next to notice Dr. Ph. A. Pieper of Paderborn's paper on this subject, we may as well incorporate the two. During infancy, the countenance is far more the index of physical than of mental operations. Owing to the quiescence of the intellectual faculties, it is more influenced by the bodily condition. For some years, in fact, it is indicative of sensation rather than thought, and these sensations are mainly drawn from physical sources. Here, then, is a wide and certain field of knowledge laid open to our research; but this is not all—as in after-life, certain regular physiognomical combinations are involuntarily employed to express internal operations, so, in early life, analogous expressions of countenance point out certain sensations merely physical. Jadelot was perhaps the first to investigate this subject systematically, and he has been followed by Eusebe de Salle, Otto, Froriep, Meissner, Billard, &c. As the experience of the present writers confirms Jadelot's views, and as they adopt his system and nomenclature, at least to a certain extent, and moreover as we have reason to believe that this source of diagnosis is less attended to than it deserves in this country, we shall here give a brief abstract of what they advance on the subject, although it is now many years since it was first submitted to the profession by its original proposer. We think it right, at the same time, to guard the young practitioner against relying too strongly on this method of diagnosis, which, after all, although founded on physical grounds, is merely symptomatical in its nature, and of quite different import from the signs of diseases strictly termed *physical*.

After extensive observation and analysis, Jadelot fixed upon certain traits or features of which the development accompanied certain states of disease, and from the regularity of their occurrence, he regarded them as pretty sure grounds of diagnosis. MM. Vogel and Pieper describe, 1, the "trait oculo-zygomatique," extending from the outer canthus of the eye to the zygomatic arch; 2, the "trait nasal" and the "trait genal," which together form a line from the side of the nose downwards under the eye to the edge of the malar

bone, including a slight portion of the outer line of the orbicularis oris in its semicircle; 3, the "trait labial." It is evident that this map of the face embraces the elements of many of the near determinate expressions, and many of those which predominate in disease. The precise affections which these traits are supposed to indicate are thus laid down by M. Pieper, (p. 8, 3d part.) "The first 'trait' is observed to be strongly marked in all diseases which have their seat primarily in the brain and nerves. When it alone is prominent, these parts only are diseased. But it is frequently connected with the second and third 'traits,' and this complication points out some inflammation either of the chest or belly. When the first is superadded to the two latter, a primitive lesion of the chest or abdomen is indicated which has taken on a nervous character; and in these cases convulsions often follow. The early or late appearance, then, of this first trait indicates a primary or secondary brain affection.

"The 'trait nasal' refers always to disease of the abdomen: this must be carefully distinguished from a similar line observed in healthy children, whose cheeks are fat. The circumstance, however, that the physician has to do with a sick child in whom the thinness of the face gives rise to more pronounced features, together with the other symptoms, will prevent this error. This 'trait' is well developed in dysentery. The 'trait genal' is more evident when the stomach and intestines are affected at the same time; the chin is protruded, the lips are drawn tight across the teeth, and the mouth is made wider; this constitutes the 'face grippée,' which, often as we have heard of it, has never before been analysed. Should then diseases take on a nervous character, the first 'trait' will be superadded. For this reason the appearance of the 'trait genal' in conjunction with the 'trait oculo-zygomatique,' together with paleness of the face and redness of the eyes, are signs of worms; since the intestines are primarily and the brain secondarily stimulated by them. The 'trait labial' is most evident in diseases of the chest."

But, whilst admitting the truth of these observations, M. Pieper is aware of their limited extent; and, in order to supply this deficiency, he proposes to consider what he calls the "quantitative relation" of the physiognomy. The parts constituting this relation are divided into hard and soft: "the hard include the bones of the head, more or less; and the softer are given in the other parts of the countenance, and exhibit in the muscles the freest and most powerful organs for the formation of the physiognomy." In pursuance of this view, he proceeds to examine the cranium in its relations to the countenance; then the bones of the head in conjunction with the face; and, lastly, the bones of the face by themselves. The importance of such considerations is apparent when we recollect that the size and shape of the skull are a very accurate representation of the size and shape of the brain; that it is an extremely active and extensive organ in children, very liable to be sympathetically affected, and indicating, by its size or relative proportions, many of the diseases

to which it is obnoxious. Many cases of convulsions and hydrocephalus, or even slighter instances of the predominance of the nervous temperament, illustrate and establish this point.

The softer parts consist of certain features subject to both external and internal influences: the forehead may be smooth and fair, or corrugated; the depth of the orbit varies from different causes; the eyes, the nose, and the mouth, are capable of infinitely varied expression; and, if we add to the information obtained from hence, that derived from the consideration of the 'traits' already described, and which should be observed as well when the child is asleep as awake, we shall be in possession of knowledge which will assist greatly in enabling us to make an accurate diagnosis.

In the first part, there is a paper by Dr. Tortual, of Munster, on the treatment of diseases of children, which contains some useful observations along with much more matter which is very commonplace and uninteresting. The object of his paper is to moderate the quantity of medicine given to children, not merely because so much is needless, but because, if it act at all, it will probably interfere with the regular course of the disease, and may thus deceive the medical attendant by masking the diagnostic symptoms. There are two periods when great discrimination in the use of remedies (at least the more active ones,) is necessary, viz. in the very outset of the disease, before it has assumed a definite form, and after the violence has somewhat subsided, when the patient is verging toward convalescence. In the first case, we may disarrange the true development of the disease, and deprive ourselves of the true indications of cure; and, in the latter, we may render recovery more tedious and less complete. This applies peculiarly to children, in whom we see a greater effort made by the constitution to throw off disease, and in whom its course is even more defined than in adults. The arguments of M. Tortual are derived from the difficulty of changing the regular progress of disease; from the efforts of nature to disembarass herself of noxious matters; and from the ill effects of stimulating medicines or food during convalescence. Further illustrations are drawn from that class of secondary affections which depend upon some more occult primary process, such as the sympathetic irritation of distant organs during dentition, and which cannot be interfered with but at the risk of greater damage to the constitution.

We agree with the author of this paper in deprecating the excessive use of medicine in these cases, and we doubt not that much subsequent delicacy of constitution may be traced back to this cause; but we cannot but think, at the same time, that he is disposed to run into the opposite extreme. It requires the nicest discrimination to know when and how long to withhold our remedies, and nothing can give this tact but a prolonged and very accurate observation of the course of disease, its different phases, the succession of its stages, &c. Without this our "*médicine expectante*" will be as mischievous as the opposite extreme, and we shall see our

patient snatched away when a little more intelligence and promptitude might have cut short the disease.

The next paper which we shall notice is a memoir by Prof. Mende, of Göttingen, in "the Asphyxia or apparent death of new-born Infants." He first describes those cases where life seems to stand still, if it be not utterly extinguished, where no external motion distinguishes the "viable" infant from a dead one; and, after tracing this state primarily to the condition of the brain and nervous system, he observes that, as it originates with these organs, so it is by acting upon these, either directly or indirectly, that we may hope for restoration. P. 91, Part I., he describes the influence which can thus be exercised as threefold: "1. Through impressions which apply immediately and operate definedly, on account of a special relation to the nervous system. 2. Through consensual influence originating in parts with which it (the nervous system) has a nearer or more distant reciprocity; as, for instance, the lungs, upon which it is as dependent as any other part for the conversion of its venous blood into arterial. 3. Through the reaction of the whole system upon the nervous system as a part of that whole."

For the better understanding of the subject the Professor divides these asphyxiated or apparently dead children into three classes.

"The first, including every species which arises immediately from the state of the whole nervous system of the fœtus, whose external sensibility is not as yet fully awakened, and in this respect occupying a lower grade than usual. 2. The second class are those depending merely on the brain, and which, according to what has been already observed, are caused either by a gradual and continued or a sudden and more severe pressure on its periphery. 3. The third includes those cases which depend upon the inadequacy of certain organs, without whose activity the influence of the nervous system in new-born infants cannot be exerted upon the rest of the body. These organs are the lungs and the vascular circle." (P. 94.)

The causes of the asphyxia may be easily arranged according to this division. Amongst those of the first class, we find weakness in either parent, sickness or bad nourishment of the mother during gestation, deficiency of the placenta or navel string, diseases of the fœtus, sudden detachment of the afterbirth with hemorrhage, premature delivery, fainting, asphyxia, or death of the mother. The causes of the second may be divided into those which occur *before* delivery; such as, long continued pressure upon the head or a sudden compression; and those which happen *during* the birth; such as pressure on the head by the pelvis merely, from some other part descending along with the head, from the use of instruments, or from congestion arising from the twisting of the navel string around the neck. With regard to the latter, it is enumerated as a cause of asphyxia by all writers as well as our author, and we think without sufficient examination: of course the way in which such an effect is supposed to be produced, is by the shortening of the cord, and the consequent tightening which the expulsion of the child occasions. Now, a little

careful observation would shew that this is a very rare case. Out of about fifty cases we have found that the ordinary length of the cord is one foot five inches, or one foot six inches; but in the same number of cases we have seen but a single example of a cord of that length being twisted round the neck: those which were so twisted were generally upwards of one foot eight inches, and the number of coils was *always* in proportion to the length of the funis. But this increase in length readily admits of the expulsion of the child without more stress on the cord than in those cases where it is not coiled round the neck, and consequently without more risk of asphyxia.

With regard to the injury inflicted by obstetrical operations, Prof. Mende mentions the fact, that a child may suffer a considerable loss of cerebral substance, and yet be born alive; whereas continued pressure on the surface of the brain causes coma, asphyxia, or death. Dr. Beatty, of Dublin, and others, have related cases where the crotchet and perforator had been used, and yet the child cried loudly after delivery; and we saw a case recently where the child was delivered by those instruments, and yet it lived three weeks after delivery, troubled however, as the mother observed, with nine-day fits.

To this class also belong those cases of apoplexy which we so often meet, whether there be effusion of blood on the brain, or merely arrest of the circulation; but, though considerable details are given, we do not see noticed a circumstance which is a very frequent cause of this accident.\* It not unfrequently happens in labours that are somewhat protracted (first labours especially,) that the uterus, fatigued by its extraordinary efforts to expel the head, ceases to act for some time after the completion of so much of the delivery. In this quiescent state it may remain for half an hour or more; but a far less space of time suffices to destroy the child by apoplexy. If only a few minutes have elapsed, although the face may be livid and distorted, it is possible in some cases to save the child by allowing some blood to flow from the funis; but, after a longer period, when apoplexy seems to have taken place, there is scarcely a chance of recovery. However, nothing is more simple and easy than the prevention of such consequences. Slight traction should be made by the accoucheur in order to excite the uterus to expel the child; and, if this be insufficient, the child must be extracted. There is no difficulty nor any danger of laceration in doing this, as the widest part of the child has previously passed the external orifice, and the only

\* We are happy to add the testimony of so experienced a practitioner as Dr. Collins, of Dublin, on this important but neglected point. In his *Practical Treatise on Midwifery*, noticed in our last number, he observes (p. 5,) "Although, generally speaking, no assistance whatever should be given, yet I have known several instances where the child was lost by adhering too strictly to this rule, where uterine action was tardy in returning after having expelled the head. When therefore, in three or four minutes after the head has been protruded, the pains do not return, particularly if the face be observed to be very livid, or still more when the child makes efforts to breathe, we should give gentle assistance so as merely to excite uterine action."—*REV.*

objection that can reasonably be urged against this plan is the risk of uterine hemorrhage; against which we can guard with tolerable certainty by making the nurse follow down, and press firmly upon the receding uterus, and by using a tight binder with compresses when delivery is completed.

The symptoms observed in this infantile apoplexy are well known, and may be found in all standard works on midwifery.

The third class includes every species of suffocative asphyxia arising from delayed or obstructed respiration on account either of physical debility, the non-penetration of air into the lungs, a deficient supply of it, or its bad quality. To this class are referred all malformations or intra-uterine diseases of the lungs or wind-pipe, and obstructions from foreign matters in any portion of the air tubes.

With regard to the treatment of these three classes, nothing new is suggested. In all cases of determination to the head, the loss of blood is our most powerful remedial agent. The quantity to be lost must be determined by its effects upon the constitution and state of the child. Where the head is not primarily affected, the removal of any impediment to respiration, and affording plenty of pure air,—the artificial inflation of the lungs,—the exhibition of stimuli,—irritation of the surface by friction or slapping the back, hands, or feet,—cold effusion,—the warm bath, &c. are the principal means to which we should have recourse.

In Vol. II. is a very excellent paper by Dr. HEYFELDER, of Sigmaringen, extracted from his "Observations on Diseases of New-born Children," on the induration of the cellular tissue. It appears to be the result of his investigations on the subject in the French hospitals, where the disease is much more frequent than in this country. In 1822, there were three hundred cases in the "Hospice des enfans trouvés;" and, in 1823, there were four hundred. In Great Britain it is comparatively a rare disease, and in Germany almost unknown. The disease arises in new-born children generally during the first five days, and frequently much earlier, from eight to twelve hours after birth. It is not confined to newly-born infants, however; for Naudeau observed it in children four months old, and Henke saw similar symptoms in a girl of twenty years. It severally commences in the lower extremities, which lose their natural colour, and become yellowish or reddish yellow, and subsequently deep red or a reddish blue. The limbs soon become tense and cold. These symptoms extend themselves to the thighs, the parts of generation, and the belly as high as the navel string; the upper extremities, and the neck and face, are then affected. The hardness of the surface increases in proportion to the diminution of the heat of the parts, until the skin entirely ceases to pit upon pressure, and the limbs feel stone cold, like those of a dead body. The motions of the parts affected is greatly impeded; the head is turned to the right or left with difficulty and apparent pain, and the child appears deaf. The eyes are closed, and the upper eyelid much swollen; the face



is full, the cheeks are hard and shining. Towards the end of the disease, the mouth is spasmodically closed, the lips are tense and dark coloured, and the angles of the mouth yellow. The child can scarcely open the mouth, and is unable to suck. The respiration is difficult, the lungs appear to remain inactive in the chest; the cry is feeble and piping.

These symptoms are somewhat mitigated by the application of warmth; but, the moment the child is removed from the warm bath, they all return as bad as before. If the air to which the child is exposed be cold and moist, the symptoms proceed more rapidly, and death follows in a shorter time. At the commencement of the disease, the pulse is slow and feeble, but perceptible; at a more advanced stage, it ceases altogether in the extremities, but may be felt the longest in the axillary arteries. The action of the heart, which is evident in the beginning, is not perceptible towards the end, even with the stethoscope.

The termination is seldom favorable; but, in the few cases which recover, we observe the disappearance of the peculiar colour and the hardness; the respiration is free, although still performed imperfectly; the limbs are more moveable, the action of the heart and arteries more perceptible; the bowels are less free, and the eyes are unclosed. The convalescence is very tedious, and the patient is extremely liable to relapses.

In the fatal cases, in which death generally takes place before the seventh day, all the symptoms increase, especially the coldness, hardness, and emaciation; swallowing is impossible; the voice ceases; regurgitation of the fluid in the stomach (sometimes mixed with blood,) takes place, and sugillation of the back and upper parts of the thigh.

With regard to the appearances after death, if we make an incision into the swollen and hard parts, we find in the cellular tissue a serous glutinous fluid, sometimes yellowish, at others grey and dark-looking. According to Auvity, it coagulates in boiling water, and remains fluid in cold. The fluid often differs in different parts of the same subject; and in one case Paletta found effusion of blood instead of this serous fluid.

The fat is yellow, orange, or dark-coloured. The lymphatics are distended, especially those in the mesentery. The veins are obstructed by a black half-coagulated blood, particularly the superficial ones, and those of the spinal marrow.

Here and there are spots of a yellow colour in the brain, and a yellow fluid is also found, which is less viscid than that contained in the cellular tissue.

The pharynx and epiglottis are distended by this fluid, and the lungs by black blood; they are hard, dark-coloured, and as it were marbled and hepatized. Occasionally but one lung is found in this state when the infant has lain only on one side. The yellow effusion is also found in the pericardium and cavity of the thorax and

abdomen. The liver is distended in like manner, but the secretion of bile is not suspended. Occasional red spots, resembling inflammation, are observed on the mucous membrane of the stomach and intestines; and a curious remark has been made on the comparative length of the intestinal canal, and especially of the small intestines. The remark is due to M. Leger, *élève interne* of the Foundling Hospital at Paris.

Dr. Heyfelder observes,

"The length of the healthy intestinal canal in new-born children is about ten feet at the utmost; in those who died of inflammation of the belly, it amounts to fourteen or fifteen feet. The following table will shew its length in those who die of induration of the cellular tissue.

"In one child it was found to be 4 feet 6 inches.

2 children	—	4 — 10 —
5 —	—	5 to 5½ feet.
7 —	—	5½ to 6
9 —	—	6 to 6½
10 —	—	6½ to 7
15 —	—	7 to 7½
16 —	—	7½ to 8
14 —	—	8 to 8½
9 —	—	8½ to 9
5 —	—	9 to 9½
3 —	—	9½ to 9¾
2 —	—	9¾ to 10
1 —	—	10
1 —	—	11." (P. 50.)

The author does not attempt to explain this remarkable deficiency, nor does he state any thing which would lead us to attribute it to the disease itself.

The results of chemical analysis of the fluid effused in the cellular tissue by M. Chevreul are given.

"The yellow serous fluid coagulated as soon as heat was applied, like the serum of the blood, and was slightly alkaline mixed with alcohol; an albuminous and somewhat yellowish precipitate was thrown down, which was soluble in alcohol. When the fluid was filtered and evaporated, there were found salts, a reddish principle like drops of oil, and another matter resembling in colour the resin of the bile.

"The bile in the gall-bladder contained gall, resin, and a remarkable quantity of picromel.

"From the heart M. Chevreul obtained cruor, fibrine, and albuminous matter. The serum yielded, with alcohol, the same reddish, yellow, and green matter as the fluid in the cellular membrane.

"A special peculiarity of the serum of the blood and the yellow serous fluid, is that when mixed in a vessel they change in a short time into a glutinous mass, which, upon pressure, separates into a membrane and a yellow fluid. From these results M. Chevreul concludes,

"1. That the yellow fluid found in the cellular tissue is formed in the blood, simply separated from it, and effused into the cellular membrane, as the colourless serum of the blood is in dropsy.

"2. The coagulability of this yellow fluid explains the hardness of the distended cellular tissue, and why it does not escape when an incision is made into the skin.

"He adds his belief that the yellow colour depends upon the bile, since all its animal matters are found in the blood.

"If we compare the appearances of this disease with the information obtained by *post-mortem examination*, they would seem to be the product of an incomplete circulation of blood in the obstructed lungs, and consequently of a deficient oxygenation thereof, which is necessarily followed by a decrease of heat."

The latter is the view of the essential nature of the disease adopted by the author: the diminution of the rapidity and perfection of respiration is followed by a proportionate diminution in the rapidity of the circulation, but the development of animal heat depends on the deoxydation of the blood in the capillaries; if, therefore, the circulation in this system be less rapid, the evolution of heat will be less. The quality of the blood in circulation will be further deteriorated, because of the open state of the foramen ovale allowing the transit of the venous blood through it, when the passage through the lungs is obstructed.

The pulmonary obstruction also gives rise to the congested state of the abdominal organs. The effusion into the cellular membrane takes place in consequence of the arrest of the capillary circulation.

The causes of the disease may be stated generally to be those which interrupt the functions of the skin; especially cold and moist weather, or damp localities. Souville observed it in the neighbourhood of Calais, which is a part of the year under water. Auvity says that it arises in the cold and damp weather in the beginning of autumn, prevails extensively during the winter, and disappears when the warm spring weather commences.

Any thing which interrupts the circulation and respiration may give rise to it; thus, extreme cold, though without wet, has been found favorable to its production.

These causes, however, do not explain entirely its great frequency in Foundling Hospitals, (that of Paris especially;) and there can be no doubt that the deprivation of their natural nourishment is one of the most important. We know that the mortality amongst spoon-fed children is much greater than amongst those brought up at the breast; and, if we couple with this the fact that this disease attacks the children in these hospitals generally at a period when they are quite unaccustomed to artificial nourishment, and less able to bear it than subsequently, we shall see good reason to place it amongst the most influential causes of this disease.

With regard to the treatment, the author gives us the opinions of different authorities rather than the results of his own experience. As a preventive, Auvity advises that sudden changes of temperature be avoided; that children should be washed in warm water, immediately dried, and rubbed with flannel; and that all unctuous and spirituous applications be avoided.

Gölis attacks the disease with mercury successfully, but Doublet has seen it fail. Souville recommends warm baths and fomentations; Andry repudiates them. Moscati and others, who regard the disease as a spasm of the cellular tissue, estimate very highly the use of camphor, musk, &c. In fact, the opinions of these authors rest more upon theoretical views than upon their experience. Warm baths, frictions, blisters, with small doses of mercury, appear to have succeeded to a certain extent in the hands of Auvity, Breschet, and Paletta: the latter found benefit in some cases from the loss of a small quantity of blood. Of course, we should always, where this is practicable, have recourse to breast-milk as a substitute for artificial nourishment.

The next paper we shall notice is one by C. W. HUFELAND "on the Intra-Uterine Diseases of the Fœtus." We cannot feel much surprise that a being whose vascular system is in a state of activity, and whose nervous system is only in part quiescent, whose organs are exercising their respective functions or acquiring their due development, should be subject to those variations from the normal condition which are observed, and still less when we reflect upon the mechanical and vital relation which the fœtus in utero bears to the mother, although the intimate operation of these latter causes may be hidden from us. The investigation of the subject has been undertaken by our author with considerable sagacity. He first considers the various modes by which the fœtus may be influenced, not merely as pathological conditions, but also remedially:

1. By means of the materno-fœtal circulation; for, although we do not believe in the direct transmission of the maternal blood, there can be no doubt that a change in the quality of this fluid has a proportionate influence in the production of fœtal disease. We know that, amongst other causes of these changes, the diet of the mother holds the first place; and hence we acquire one means of influencing the state of the fœtus.

2. The nervous system of the mother is also capable of communicating impressions to the child; as, for instance, sudden mental shocks, fright, &c. have been known to destroy the fœtus.

3. Mechanical means, such as blows on the abdomen of the mother, falls, shocks, &c. may injure or destroy the fœtus.

4. The common natural agents, such as warmth, electricity, magnetism, &c. applied to the fœtus through the body of the mother, may produce these effects upon it.

5. Communication of disease from the mother to her infant may take place, as is observed in children born with syphilitic affections, &c., and the type of any organ or system of the mother may be transmitted to the fœtus. So much for the way in which mischief may be done to the embryo; the question naturally arises, whether we cannot influence the child medically by some of these modes; and our author concludes (p. 87, vol. ii.) that these are the following

means in our power by which we may act upon the child in the womb :

" 1. By the increase or diminution of (maternal) nourishment. 2. By the increase or diminution of the rapidity of the circulation. 3. By changing the quality of the nutrition and air. 4. By mechanical means, as altered position of the mother, bandages, &c. 5. By the natural agents. 6. By medicines, and these of three kinds, either those which act upon the nervous system, upon the circulation, or by simple penetration, as the most fluid, such as æther, ammonia, musk, camphor, &c. appear to do. 7. By mental impressions."

The second part of this essay is devoted to the investigation of the peculiar diseases to which the fœtus has been found liable: the first class includes malformations and monstrosities; the second, atrophies; the third, hypertrophies; and the fourth, dyscrasies, diseases or dispositions to disease, such as scrofula, syphilis, (of which some striking examples are given,) the exanthemata, &c.; the 5th, nervous and mental disorders; the 6th, accumulations of fluid; the 7th, vascular congestions and inflammations; the 8th, skin diseases; the 9th, worms; the 10th, disorganizations, pseudo-organizations; the 11th, mechanical injuries; the 12th, death previous to birth. The principal causes of the latter are stated to be fright, strong mental emotion, accidents or diseases on the part of the mother, deficient vital energy on the part of the child, and congestion of the uterine system. All these circumstances are tolerably well known, and examples may readily be met with; therefore we shall not dwell upon them, merely observing in passing, with regard to the death and expulsion of the ovum at an early period, that, in seven cases out of ten, the cause is local, and to be found either in disease or malformation of the ovum or fœtus; and consequently abortion, instead of an accident to be avoided or postponed by any means in our power, is in fact the best thing that could happen under the circumstances, as it frees the uterus from that which might form a nucleus for disease.

The third and last portion of this paper is occupied with the practical application of the means described in the first part, to the preservation of the life and health of the fœtus in utero. These are, 1. By attention to regimen. Inasmuch as congestion is one of the most frequent causes of injury, we must counteract it by the abstraction of blood, by rest, and the horizontal posture. The author states that he has often found the movements of the child increase in strength after bleeding the mother. Again, the child is often destroyed by the feebleness of its constitution; and we are advised to remedy this by stimulating frictions to the abdomen of the mother, or we may thus apply laudanum if the irritability or disposition to convulsive action be excessive. The administration of ice or of medicated waters (those of Pyrmont and Driburg are named,) is spoken of as extremely useful.

2. By suitable and normal development and nourishment. By increasing or diminishing the nutrition of the mother, M. Hufeland conceives that we can regulate the degree of foetal growth.

3. By strengthening the constitution of the foetus, and removing any nervous weakness; and this is to be done mainly by the mother using simple nutrition, avoiding stimulants, and regulating her diet exactly according to any idiosyncrasies of her own constitution.

4. By purity of the fluids, and removing any disease under which the mother may labour.

5. By accustoming the mother to impressions of beauty. The ancients were in the habit of placing before the eyes of pregnant women the most exquisite paintings; and M. Hufeland remarks that, in Catholic churches, where adoration of the Virgin is performed with peculiar earnestness by pregnant women, there is something *Madonna-like* about the countenances of the female offspring,—an observation in which perhaps fancy has some share.

We have preferred giving a condensation of M. Hufeland's Essay, on account of its importance, rather than entering into detail upon any particular part. Those anxious for more minute information we refer to the original itself, promising them that they will be amply repaid for their trouble.

In the Third Volume is a valuable paper on Aphthæ and Muguet, by Dr. NAUMANN, of Bonn, which, however, we can do little more than point out to our readers. The two disorders, so different and yet so liable to be confounded, are well described, and the distinction between them is accurately drawn; the one being a secretion upon the mucous membrane of the mouth and tongue, and the other an elevation of that membrane in the form of small blisters, which, if broken, reveal small superficial ulcers. The state of the constitution has probably much to do with the production of each variety, but especially in aphthæ; and, we consequently, find local remedies more universally successful in muguet. These, however, should not be alone depended upon; but we may at the same time exhibit a combination of alterative medicines with purgatives. Emetics are also recommended in the commencement. Probably the best local remedies are borax and honey, or a mucilaginous gargle with alum or dilute sulphuric acid.

We cannot conclude our review without repeating our wish that we had a similar collection of monographs on diseases of children by British authors. There are numerous and very valuable essays scattered through the various periodical works or published separately; but we have no standard book on diseases of children.

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## ART. IV.

*The Physiology of Digestion, considered with Relation to the Principles of Dietetics.* By ANDREW COMBE, M.D. &c.—Edinburgh, 1836. 8vo. pp. 332.

FOR the present volume from the pen of Dr. Combe we were prepared by an announcement in the third edition of his "*Principles of Physiology applied to the Preservation of Health*," in which he stated that, in compliance with suggestions that had been frequently made to him, it was his intention to give an account of digestion, nutrition, the circulation, &c., in a future work. The great popularity of the former publication will doubtless have already given a wide circulation to the present production; although the author will not, we are sure, deceive himself with the expectation that the public, who received his first volume with such great favour, will be found industrious enough to peruse a second and a third volume, however worthy of their perusal, with equal diligence. Those, in fact, who are most in need of the instruction such works convey are not the most likely persons to be very persevering readers. One instructive book would be received with submission by many whose indolence will deter them from the study of a series of volumes. The usefulness, therefore, of this treatise on the Physiology of Digestion will be much more limited, we apprehend, than that of the *Principles of Physiology*, merely because it comes in the shape of a second book, and a whole book upon one subject.

Yet, of all subjects which interest the health of mankind, and of all subjects upon which mankind commit the greatest number of daily errors, that of Digestion and of Dietetics is the most remarkable. Considering how many persons there are with whom eating and drinking form the most interesting events of the day; reflecting, too, on the care taken to refine the arts which give greater enjoyment to the comforts of the table; and bearing in mind the almost universal outcry concerning indigestion, and the absolute necessity of eating and drinking; it is really humiliating to reflect upon the ignorance of people in general respecting the food proper for themselves and for their children, and for persons of different habits and different ages, and in different climates and seasons, and in different states of health. If the utmost ignorance is a state favorable to the reception of knowledge, the public are certainly in a most appropriate condition to receive Dr. Combe's book.

Although his work is chiefly intended for the general reader, we notice it in conformity to the principle by which we were governed in reviewing several works on Public and Private Hygiène, in our second Number. We are persuaded that there are many and grievous ills arising from impaired digestion, which, when once incurred, are most difficult of relief, if indeed they admit of per-

fect relief from medicine. In the treatment of all such maladies, too, the cure must be partly dietetic; and we well know that too many medical men are destitute of steady dietetic principles, embarrassed when required to lay down dietetic rules, and prone to rush into dogmatic absurdities on this subject with regard to patients for whom nothing can be too absurd, provided it be authoritatively delivered. Thus it is that the plain practitioner, who has dismissed his patient in all good faith to seek health from change of air, finds, on the patient's return from his travels, that there is much to be learned concerning diet and regimen; that it is perfectly proper, for instance, in chronic organic diseases, to eat portions of animal food, highly seasoned, two or three times a day, and to take as often two or three glasses of sherry; but, at the same time, quite essential to shun the smallest fragment of pudding and every description of vegetable, as if to eat it were certain death. If sherry has been prescribed to one patient, another has been assured that his life depends upon brandy: to one, champagne has been recommended as the balm of life, and to another beer, as the only hope of earthly salvation; whilst perhaps both have been solemnly warned from the enormity of tea, but allowed coffee and liqueurs, or (by a more rigid sentence) condemned to sip cold water at tea-time, with the addition of a precise number of spoonfuls of salt. By this kind of system, if system it can be called, sometimes a bon-vivant may become, to be sure, an involuntary member of the society of the temperate; but many a lady, on the other hand, is introduced to the consolation of dram-drinking; and many a patient, who might have lingered through a few months, or even years, of valetudinarian life, is despatched in a few weeks. And all this outrageous dictation is submitted to because people, otherwise tolerably educated, are grossly ignorant of physiology, and because medical practitioners pay too little attention to the regulation of the diet of their patients. Surely, then, both patients and practitioners may with much advantage be advised to read Dr. Combe's book; the practitioner to supply himself with plain rules founded on plain reasons, and the patient to qualify himself to understand those reasons, so as to ensure his obedience to rational regulations, and his contempt for the arbitrary mandates of the presumptuous and the unscientific.

Dwelling briefly on the obvious facts that animals intended for locomotion, not being capable of receiving nourishment from fixed roots, are provided with a receptacle or stomach, from the supplies taken into which the whole body is to receive nutritious matter; and that the keeping up of this supply is not left dependent on the will, but instigated by the resistless force of hunger and thirst; Dr. Combe proceeds, in his second chapter, to treat of these appetites, illustrating those points which he wishes to impress on his readers with his usual felicity. The experiments of Brachet, to



show the degree of dependence of the sense of hunger on the connexion of the stomach with the brain, are thus mentioned:

“Brachet starved a dog for twenty-four hours, till it became ravenously hungry, after which he divided the nerves which convey to the brain a sense of the condition of the stomach. He then placed food within its reach, but the animal, which a moment before was impatient to be fed, went and lay quietly down, as if hunger had never been experienced. When meat was brought close to it, it began to eat; and, apparently from having no longer any consciousness of the state of its stomach—whether it was full or empty,—it continued to eat till both it and the gullet were inordinately distended. In this, however, the dog was evidently impelled solely by the *gratification of the sense of taste*; for on removing the food to the distance of even a few inches, it looked on with indifference, and made no attempt either to follow the dish or to prevent its removal.

“Precisely similar results ensued when the nervous communication between the stomach and the brain was arrested by the administration of narcotics. A dog suffering from hunger turned listlessly from its food when a few grains of opium were introduced into its stomach. It may be said that such a result is owing to the drug being absorbed and carried to the brain through the ordinary medium of the circulation; but Brachet has proved that this is not the case, and that the influence is primarily exerted upon the nerves. To establish this point, two dogs of the same size were selected. In one the nerves of communication were left untouched, and in the other they were divided. Six grains of opium were then given to each at the same moment. The sound dog began *immediately* to feel the effects of the opium and became stupid, while the other continued lying at the fire-side for a long time, without any unusual appearance except a little difficulty of breathing. In like manner, when the experiment was repeated with that powerful poison *nux vomica*, upon two dogs similarly circumstanced, the sound one fell *instantly* into convulsions, while the other continued for a long time as if nothing had happened.

“These results demonstrate, beyond the possibility of doubt, the necessity of a free nervous communication between the stomach and the brain, for enabling us to experience the sensation of hunger. The connexion between the two organs is indeed more widely recognized in practice than it is in theory; for it is a very common custom with the Turks to use opium for abating the pangs of hunger when food is not to be had, and sailors habitually use tobacco for the same purpose. Both substances act exclusively on the nervous system.” (P. 14.)

The relation thus shown to exist between the stomach and the brain is then spoken of by Dr. Combe, with reference to certain facts sufficiently well known,—as the spoiling of the appetite by bad news, and the insensibility to its claims in times of earnest attention or intense study. It is the peculiar merit of the author to connect facts, most of which are familiarly known to medical readers, with observations useful to those unacquainted with medical subjects; and he takes much, but not at all too much, pains to

convince the reader of the necessity of proportioning the supply of food to the waste of the body, by showing that, whenever the waste is greatest, the desire for food is proportionally increased. He justly remarks, that forgetfulness of this piece of knowledge is a frequent source of indigestion and ill health. There is not a word of the following passage that is not true, and we extract it on account of its pointing to a very common cause of ill health, against which medicine is often opposed in vain.

"There are numerous persons, especially in towns and among females, who, having their time and employments entirely at their own disposal, carefully avoid every thing which requires an effort of mind or body, and pass their lives in a state of inaction entirely incompatible with the healthy performance of the various animal functions. Having no bodily exertion to excite waste, promote circulation, or stimulate nutrition, they experience little keenness of appetite, have weak powers of digestion, and require but a limited supply of food. If, while inactive, and spending little, such persons could be contented to follow nature so far as not to provoke appetite by stimulants and cookery, and to eat and drink only in proportion to the wants of the system, they would fare comparatively well. But having no imperative occupation, and no enjoyment from active and useful exertion, their time hangs heavily on their hands, and they are apt to have recourse to eating as the only avenue to pleasure still open to them; and, forgetful or ignorant of the relation subsisting between waste and nutrition, they endeavour to renew, in the present indulgence of appetite, the real enjoyment which its legitimate gratification afforded under different circumstances. Pursuing the pleasures of the table with the same ardour as before, they eat and drink freely and abundantly, and, instead of trying to acquire a healthy desire for food and increased powers of digestion by exercise, they resort to tonics, spices, wines, and other stimuli, which certainly excite for the moment, but eventually aggravate the mischief by obscuring its progress and extent. The natural result of this mode of proceeding is, that the stomach becomes oppressed by excess of exertion—healthy appetite gives way, and morbid craving takes its place—sickness, headach, and bilious attacks, become frequent—the bowels are habitually disordered, the feet cold, and the circulation irregular—and a state of bodily weakness and mental irritability is induced, which constitutes a heavy penalty for the previous indulgence. So far, however, is the true cause of all these phenomena from being perceived even then, that a cure is sought, not in a better regulated diet and regimen, but from bitters to strengthen the stomach, laxatives to carry off the redundant materials from the system, wine to overcome the sense of sinking, and heavy lunches to satisfy the morbid craving which they only silence for a little. Some, of course, suffer in a greater and others in a less degree, according to peculiarities of constitution, mode of life, and extent of indulgence; but daily experience will testify, that, in its main features, the foregoing description is not overcharged, and that victims to such dietetic errors are to be met with in every class of society." (P. 23.)

The extent to which errors of this kind are practised is almost incredible; insomuch that, in nine-tenths of mankind, the first loss

of health is to be attributed to a disproportion between food and exercise. The poor labourer suffers from a disproportion over which he has no control; his toils are severe, and his food is scanty and not of the most nourishing kind; but, although for this he incurs premature old age, his sufferings of mind and body are not so great as the afflictions which assail those who are in what are called comfortable circumstances. Men are disposed to congratulate themselves when they can indulge in an easy chair after dinner, heedless of the calls of business which once they so alertly attended to. The tradesman leaves the cares of his shop to those whom he can trust; the merchant flies far away from his office, to dine and to doze; the lawyer, once so energetic, can no longer be spoken with at ungentle hours; and even the physician cheers his younger brethren by resisting the commands of rich and powerful patients, unless they choose to be ill in the morning. But for this abandonment of duty for ease, sure retribution follows. The waste becomes less, from inaction of body and of mind; the food taken is usually richer and more abundant than it was in days of struggling industry; and the stomach loses some of its power, and digestion and assimilation become imperfect; and the skin, or kidneys, become over-exerted, and gout or gravel, or rheumatic pains, or the various troubles of plethora, break in upon the dream of an idle and contented retirement. Medicine alone can neither avert nor remedy evils thus arising; and the precepts of medical men will be best enforced, best remembered, and best followed, if the reason is also stated, and the patient is convinced that he must either be more active, or, if age or other circumstances forbid that, must diminish the copiousness and richness of the material supply.

We are never more sensible of the degradation into which rational creatures may fall, than when we see the wealthy and luxurious resorting to watering places for no other object but to enable themselves to pursue a course of gluttonous excess with impunity. Each morning, to the sound of music, may be beheld the pampered and the selfish of the higher and middle classes, endeavouring to make a composition with nature for the previous day's excess, and for neglect of bodily exercise and mental activity, by drinking huge goblets of nauseous saline water. Crowds of persons of both sexes seem to take a pride in exhibiting themselves thus taking purgatives; and the disgusting custom of walking about afterward, (in lovely gardens, perhaps, where every object is noble but themselves, who are merely meditating on the salts they have swallowed,) is continued to the very verge of indecency. The great object for which the waters are commonly drunk being obtained, (an object much inferior, in our opinion, to what the saline waters are really capable of effecting, by a gradual alteration of the circulating fluids,) the invalids repair to their respective hotels, and, by the aid of many stimulants and provocatives, contrive to eat and drink during the day, after a fashion equally

unsalutary and inelegant. If an American writer chose to return the poor spite of some of our English travellers in the United States, he would find abundant materials at the tables d'hôte and in the public rooms of any fashionable spa; and, without departing in the least particular from the truth, might present a picture of our unhappy countrymen and women, in which excess, idleness, and apathy as regards all good and elevated pursuits, furnish the principal colouring. He might also, if a medical observer, hold up to admiration the people of the comfortable classes of an enlightened country leading a life the most conducive to mental and bodily disease, out of pure anxiety to enjoy the utmost possible indulgence, and to suffer the least possible uneasiness. With such classes of the people, the medical teacher is certainly very much wanted.

The value of good teeth, as respects good digestion, is not sufficiently regarded. A desire to maintain the beautiful appearance of the teeth, which might supply the want of knowledge of their great importance as auxiliaries of the stomach, so often leads to the habitual application of tooth-powders capable of destroying them, that Dr. Combe very properly devotes a few pages to the subject of their preservation. Our private opinion is, that there are few tooth-powders that are entirely harmless; many are known to be directly prejudicial by their acid properties, and some we suspect to be very injurious by their coarse mechanical operation. The important object is to keep the surface of the teeth clean, which may be effected by using a soft tooth-brush dipped in tepid water after every meal, and also at night, always avoiding too much violence. But it is in vain to strive, by any applications, to keep the teeth in health, unless a rational system of diet be also observed. A disordered stomach always reacts on the teeth.

Most people are very incautious as to the temperature of the substances brought into contact with the teeth; and Dr. Combe goes so far as to warn his readers against allowing the cold night-air to come in contact with them after leaving hot rooms; and advises breathing through two or three folds of a silk handkerchief or through a woollen comforter. Results so much more serious than the toothach are produced by thoughtless exposure to the night-air, and sometimes, according to our own observation, fatal results after a single exposure, that it was with some degree of interest we recently heard of a contrivance called the *respirator*; a sort of veil of pierced metal, so contrived as to be worn over the mouth. It seemed to us that its utility would be great; but we fear that, like the safety-lamp of the miner, it would often be left at home when most wanted.

Like the generality of authors who write upon digestion and diet, Dr. Combe strives to convince his readers of the important preliminaries to good digestion which are designed to be effected, by the teeth and salivary glands, in the mouth. It unfortunately

happens, however, that the custom of eating with extreme rapidity, commenced in very early life, proves too strong in most individuals to yield to any tardy conviction of the impropriety of neglecting due mastication. Indeed, whoever is animated by a desire to attend to this process will so often find himself left far behind in the race at dinner, and constituting part of so very small, however respectable a minority, as to be in much danger of being discouraged, and driven to swallow with the velocity of those around him.

Of all physiological facts, that of the nourishment of animal bodies by the food they take is the most familiar; yet no fact presents more matter for reflection. By what we call a law of the economy, the body grows for a certain number of years: bone, muscle, blood-vessel, membrane, parenchyma, and all the materials of the body, being formed out of the circulating blood, and the blood itself prepared in a manner that escapes all scrutiny. But, after a certain number of years, although food may be still taken in equal quantity, and all the materials of the body are formed with equal nicety, and deposited with equal exactness, each in its proper tissue and just place, *growth* proceeds no further. Still, for an appointed time, the daily elaboration of animal and vegetable substances produces all the required elements of the body, until other changes, the precursors of the body's death, announce its decay. Dr. Combe has given a clear and interesting account of the wonderful processes by which all this is effected, and of the organs that are employed in them, containing little or nothing new to medical readers, but much that is new and surprising to the general reader. The following particulars relative to the muscular coat of the stomach will, however, be new perhaps, even to some who are well acquainted with the facts generally known concerning digestion.

"The *second, middle, or muscular* coat consists of fleshy fibres, one layer of which, running longitudinally from the cardia to the pylorus, seems to be a continuation of the longitudinal muscular fibres of the gullet: another runs in a circular direction, embracing, as it were, the stomach from one curvature to the other, and constituting what are called the transverse fibres. A third and more internal layer of this coat, is spoken of by Sir Charles Bell as a continuation of the circular fibres of the gullet, which divide into two parcels, the one distributed over the left or larger end, and the other over the pyloric or narrower end. The uses of the *muscular* coat have, as we shall afterwards see, a direct reference to the special function of digestion. By the joint action of its longitudinal and circular fibres, the stomach is enabled to contract, and shorten its diameter in every direction, so as to adapt its capacity to the volume of its contents, while, by their successive action, or alternate contraction and relaxation, a kind of churning motion is produced, which contributes greatly to digestion by the motion which it imparts to the food, and the consequent exposure which it effects of every portion of it in its turn to the contact of the gastric juice. The force and rapidity of

these muscular contractions are modified by the more or less stimulant nature of the food, the state of health, exercise, and other circumstances; but, according to Dr. Beaumont, the ordinary direction in which they take place, and the course which they impart to the food, are as follows. The alimentary *bolus* or morsel, on entering the cardiac orifice, turns to the left, follows the line of the great curvature of the stomach towards the pylorus, returns in the line of the smaller curvature, makes its appearance again at the cardia, and then descends as before to the great curvature, to undergo similar revolutions till digestion be completed. Each revolution occupies about from one to three minutes, and its rapidity increases as chymification advances." (P. 68.)

After speaking of the different functions of the nerves of the stomach, Dr. Combe devotes a considerable number of pages to the subject of the gastric juice. The strangeness of the case of Alexis St. Martin, related by Dr. Beaumont, of the United States, has apparently made a strong, and, we could almost say, an undue impression on Dr. Combe's mind; for the results are not many or even altogether novel, whilst even the most candid reader views the marvellous narration, however unjustly, with a slight degree of incredulity. The subject of the case, a young Canadian, was wounded by the discharge of a musket shot; the whole charge of powder and duckshot being received into the left side, at the distance of only one yard from the muzzle of the gun. The integuments and muscles were blown away, "to the size of a man's hand," the anterior half of the sixth rib was carried away, the fifth rib fractured; the lower portion of the left lobe of the lungs was lacerated, as also the diaphragm; and the stomach was perforated. A long and tedious process preceded recovery; and, a year after the accident, the injured parts were all healed, except the stomach, the perforation of which remained, and was two and a half inches in circumference. For some months longer, the food could only be retained by a compress and bandage being worn; but then "a small fold or doubling of the villous coat began to appear, which gradually increased till it filled the aperture, and acted as a *valve*, so as completely to prevent any efflux from within, but to admit of being easily pushed back by the finger from without." Two years after this period, Dr. Beaumont began his observations and experiments on this case, continuing them for four or five months; and four years afterward he renewed and completed them, having then induced the subject of them to reside near him for the purpose; which he appears to have done for about two years. The experiments were again renewed a year later, and continued for a few months. The subject of these experiments is still living, and in good health, although the perforation has now existed twelve years. It is situated about three inches to the left of the cardia, near the left superior termination of the great curvature. The means of observation were much facilitated by the circumstance that, when the stomach was nearly empty, it was practicable, by

artificial distention, to examine its cavity to the depth of five or six inches. When the man had slept for a few hours on the left side, the protruded portion became larger, spreading over the integuments to the extent of five or six inches in circumference, and plainly exhibiting the mucous coat. The opportunity thus afforded for observation was certainly unusually advantageous; but the results appear to us to be less important than they have seemed generally to be considered. We do not, for example, recognize anything novel in the assurance that the gastric juice is not secreted in the intervals of digestion, and does not accumulate to be ready for acting on the next meal; nor in the fact, which might fairly be concluded from phenomena before known, that the villous coat of the stomach, when the individual is in a feverish state, becomes red and dry, or pale and moist, and loses its smooth and healthy appearance. Nor does the fact present itself to us at all in the light of a discovery, that in the same feverish condition no gastric juice is secreted, even when food is taken. To see such things is indeed curious, but the knowledge of them was previously established by symptoms during life, and by appearances after death. We accept with gratitude every kind of confirmatory evidence; but we object to exaggerating the importance even of such evidence, when drawn from an example in which it is difficult to admit the perfect integrity of the functions of the organ in question. There is sufficient novelty in Dr. Beaumont's method of procuring the gastric juice in this case to justify our quoting it, although the results are still, we think, of trivial importance.

“ On examining the surface of the villous coat with a magnifying glass, he perceived an immediate change of appearance ensue whenever any aliment was brought into contact with it. The action of the neighbouring blood-vessels was instantly increased, and their branches dilated so as to admit the red blood much more freely than before. The colour of the membrane consequently changed from a pale pink to a deeper red, the vermicular or *worm-like* motions of the stomach became excited, and innumerable minute lucid points and very fine nervous and vascular papillæ could be seen arising from the villous coat, from which distilled a pure, colourless, and slightly viscid fluid, which collected in drops on the very points of the papillæ, and trickled down the sides of the stomach till it mingled with the food. This afterwards proved to be the secretion peculiar to that organ, or, in other words, the true *gastric juice*; the mucous fluid secreted by the follicles, which some have mistaken for it, is not only more viscid, but wants altogether the acid character by which it is generally distinguished. Pursuing his experiments, Dr. Beaumont then found that the contact not only of food but of any mechanical irritant, such as the bulb of a thermometer, or other indigestible body, invariably gave rise to the exudation of the gastric fluid from these vascular papillæ; but that, in the latter cases, the secretion always ceased in a short time, as soon apparently as the organ could ascertain that the foreign body was one over which the gastric juice had no power. But the small quantity obtainable in this way is perhaps more pure and free

from admixture, and therefore better adapted for examination, than any which can be procured under any other circumstances." (P. 89.)

In the imposing list of "Inferences from Dr. Beaumont's Experiments and Observations," (p. 140,) and which contains no less than forty-five such alleged inferences, the medical reader will be surprised to find scarcely twelve that contain any novelty; and of these the greater part, if not all, appear to us to be of a very doubtful nature. If we admit amongst the least doubtful the inferences that the natural temperature of the stomach is about 100° Fahrenheit, and not elevated by the ingestion of food, but elevated by exercise, and depressed by sleep and rest in a recumbent position; and that gentle exercise facilitates the digestion of food, (and we admit even these with some abatements;) we are not at all convinced that hunger is the effect of distention of the vessels that secrete the gastric juice; nor that mastication and insalivation in no way affect the digestion of food; nor that the action of the gastric juice is facilitated by the motions of the stomach; nor that such motions produce a *churning* of the stomach's contents. And, as regards the rest of the inferences, about thirty in number, they seem to us to relate to facts very commonly known and very generally admitted before Dr. Beaumont began his experiments. We admire the patience and zeal of the experimenter, but we protest against being carried away by the novelty of the experiments to declare every inference confirmed by them an actual discovery. For example, the fact which seems to be brought forward with particular claims of this kind, that liquid food is immediately absorbed in the stomach, and disappears, was published by Magendie at least eighteen years ago. We cannot but think, also, that by far too much is assumed by Dr. Combe as the result of the muscular contractions of the stomach during digestion. That strong soups, and other forms of concentrated nourishment, are not really nutritious, and not in fact well digested, is, we believe, well established; but this circumstance may be accounted for without having recourse to the supposed difficulty with which the stomach contracts on such food; neither do we think that the statements of Dr. Philip respecting the order in which the food is digested, as observed in healthy animals, can be considered as put aside by a set of experiments on a man whose condition we should have some difficulty in admitting to be completely healthy at any period during the performance of the experiments of Dr. Beaumont. Altogether, we should have been better pleased with a more general account of the known facts respecting digestion, than we are with the devotion of so large a space in a popular work to the notice of experiments which have not yet passed the ordeal of professional examination.

The transmutation of all the varieties of food partaken of by man into chyme in the stomach, into chyle in the intestines, and



into blood in the lungs,—the blood itself being a most complex fluid, from which all other fluids and all the solids of the body are formed,—comprehends so many extraordinary particulars, that the most minute observations yet made, and the explanations yet given respecting parts of the process, even of such as, resting on chemical principles, seem the most to be depended upon, leave us in a state of ignorance the most humiliating and profound. Yet it would seem as if the direction now taken by physiological enquirers, through the science of animal chemistry, promised by slow degrees to unveil some portions of the mystery, and, although still leaving the great principle of all the operations unknown, would revolutionize the whole of practical medicine; accounting for what was before empirical, and giving stability to therapeutics. But, before that great end is accomplished, many erroneous chemical theories will rise and fall, and many professed improvements in medicine will flourish for awhile, and then sink into decay. The range of chemical medicine is certainly yet very limited; and, what is still more discouraging, the facts ascertained concerning digestion have not been so fertile in good dietetic principles as might have been expected. The chyme, an acidified mass, passes from the stomach into the duodenum; and there the bile and pancreatic juice are added, and the chyme is separated into what is excrementitious and what is called chyle; and over this most important process we can exert little control, and of how it is completed we may be said to be very scantily informed. The portion of the process performed in the duodenum, and even in the long folds of the small intestines; the exact use of the caput cœcum of the colon, and of the expanded colon itself, are far too little known to warrant the confident opinions so frequently expressed concerning them. And, in the mean time, one cannot reflect without astonishment on the common and capricious employment of alkalies and of acids in medicine; so often prescribed with advantage where it would, we suspect, puzzle the practitioner exceedingly to account for his own success.

In the concluding chapter of the first part of his work, Dr. Combe gives a succinct account of the little that is known on the subject of Chylification; to which we think, however, that Dr. Prout's observations, detailed in his *Bridgewater Treatise*, might with propriety have been added. But it is necessary to take into consideration that the descriptive and physiological chapters of Dr. Combe's book are but introductory to those in which he endeavours to enlighten general readers on the important point of Dietetics, viewed in relation to the laws of digestion; and perhaps the work would really have been more useful, if the physiological or introductory part had been more condensed. Notwithstanding the clearness of Dr. Combe's style, we fear there is more said in that division of the work than general readers will readily comprehend or usefully retain.

The Second Part of the work is full of interest, and quite equal to the best portions of Dr. Combe's former publication. It relates to matters the very titles of which show that they concern all readers. The times of eating, the quantity and kinds of food, the conditions to be observed before and after eating, and the subject of drinks, are things of daily and serious import to all reflecting and to all unreflecting persons; and the pages devoted to these topics will be doubtlessly carefully studied by people of all ranks and occupations.

With that very considerable portion of mankind of which the happiness mainly depends on corporeal enjoyment, there is apparent a perpetual desire to participate in the happiness so bountifully imparted to some of the most inoffensive of the lower animals; and which arises from continual eating. We hope not to be reproached with the levity of satire if we declare that, to our observation, a most lamentable majority of our country friends awake in the morning to no nobler desire than that of a hearty breakfast; and that, when this meal is happily concluded, their thoughts seem to turn with diurnal regularity towards luncheon, from which, by gentle transition, they pass into more serious arrangements as to dinner; closing the thankful day with solid supper, in defiance of all the practitioners upon earth. In the finer season, even the intervals between more satisfactory meals are often much filled up with forbidden fruits in the garden; and tea and bread and butter are not rigorously taken into our calculation. We have sometimes blamed the practitioner for being so unprepared with dietetic rules; but there are emergencies which baffle the wisest. How often does it happen that his patience is tried, on quitting the room of a patient in a state of disease attended by excitement and feverishness, by his being asked what the invalid must eat, and whether something nourishing ought not to be taken every hour or two. There are numerous families accustomed to so indulgent a sway as to render all the members averse to regulations which enforce any three hours in the whole day being passed wholly without food. People of the class accustomed to this plan commonly eat five times a day. People of fashion, scorning such a laborious system of nutrition, make it their boast that they only eat twice a day. Thus, whilst no small division of the agricultural population resist the langours of a rural life by eating at four or five in the morning, and again at seven or eight, and again at eleven or twelve, and again at four or five in the afternoon, and again at eight or nine in the evening; the more refined inhabitants of the metropolis, and the aristocracy of aspiring provincial towns, take much credit to themselves for not breakfasting until the middle of the day, (that breakfast being a very substantial dinner,) and for not dining before night, (that dinner being a consolidation of dinner and supper.) Thus it would seem that in eating and drinking, as in morals, men ever miss the

golden mean. As some grovel in low and hopeless vice, and others subtilize themselves into impracticable virtue; so some torment the stomach by gross and perpetual labour, and others provoke it by alternations of fulness and fasting; and indigestion, with more than poetical justice, seizes upon them all, and consigns them to the salutary discipline of medicine.

It is the aim of Dr. Combe's excellent book to relieve mankind from these evils,—the evils of indigestion, with all its numerous consequences, at which none laugh but those who never felt any of them, and from which it is sufficiently discreditable to human reason that it has not sooner emancipated all persons of tolerable education and healthy understanding. Of all the useful arts, the art of happiness seems to have yet attracted the smallest share of attention; and of that art a very principal element is surely the preservation of mental and bodily comfort, neither of which are compatible with disorder in the first passages, with commotion in the stomach, and rebellion in the bowels.

We are acquainted with individuals for whose opinions we entertain much respect, whose imagination ever pictures to them some region secure from the formal invasion of a daily dinner, and who silence their friends, if they do not convince them, by earnest invectives against regulating meals by measurements of time, and disregarding the promptings of unerring nature, which tell us to eat when we are hungry, and to drink when we are thirsty. We do not see that Dr. Combe sanctions these philosophical sophistries. He truly observes, that there is an evident adaptation of the human economy to the performance of periodical operations, and that stated times for eating may really be observed without any departure from rationality of conduct. In truth, the argument of the philosophers might be as properly extended to sleep; and if, on the one hand, a family might escape the torment of a long dinner by a readier access to the temporary succours of the pantry or the tray, so, on the other, might they be delivered from the slavery of periodical repose, and indulge in sleep in many stolen hours of day, regardless of place as well as of time. But this would evidently be too inconvenient to find general encouragement in regular families; and the same may be said of the plan of independent eating; whilst neither, in all probability, would prove more conducive to health than the present mechanical observances. We may say, indeed, with Dr. Combe, that individuals may suffer a little from existing arrangements, but the vast majority are undoubtedly benefited.

"As a general rule," says Dr. Combe, "five or six hours should elapse between one meal and another—longer if the mode of life be indolent, shorter if very active. Digestion occupies from three to four or five hours, and the stomach requires an interval of rest after the process is finished, to enable it to recover its tone, before it can again enter upon the vigorous performance of its function. Appetite, accordingly, does not begin to shew itself till some time after the stomach has been empty, and if

food be taken before it has recovered its tone, the secretion of gastric juice and the contracting of its muscular fibres are alike imperfect, and digestion consequently becomes impaired.

"The interval between each meal ought to be longer or shorter in proportion to the quantity eaten, and to the more or less active habits of the individual; and it would be absurd to fix the same standard for all. A strong labouring man, whose system is subjected to great waste from being engaged all day in hard work, will require not only more frequent but more copious meals than an indolent and sedentary man; and those who eat very little will require to eat at shorter intervals than those whose meals are heavy. An invalid on restricted diet may thus require to eat every four hours, where formerly, with a more copious diet, once in six hours was sufficient." (P. 132.)

If many of those whose lot has fallen in lands flowing with plenty assimilate themselves with animals whose harmless lives are chiefly passed in the mastication of food; so, on the other hand, those who, in uncivilized countries, depend for a dinner on the uncertain supplies of the chace, are habituated to take sufficient at one meal to fortify themselves against the chances of passing at least twenty-four hours without another; and habit probably renders this system as favorable to the force of digestion in the Indian as the committee of the Zoological Society report it to be to the health of the wild animals under their protection in the Regent's Park. Dr. Combe relates that he once travelled with a monk of La Trappe for three days, who observed this plan; and the poor monk ate once a day, to the very brink of apoplexy.

Every practitioner knows with what reluctance sluggish self-indulgent people are brought to walk into the open air before breakfast. Some have the excuse of its disagreeing with them; and there are few who can bear much exertion before any food is taken. We are, however, of opinion that exposure to the air, if only for a quarter of an hour, in all tolerable weather, before breakfast, has a great tendency to strengthen the stomach, and to promote the action of the bowels; so as to be well worth the attention of medical advisers in cases of habitual costiveness. In marshy situations even this should be done with caution; and long and early parades have, in such circumstances, seemed most prejudicial to the health of soldiers. If, as is alleged, there is in such circumstances a greater susceptibility of infection and other poisonous influences, we should ascribe it as much to the want of tone and resistance in individuals so exposed, after fasting several hours, as to the higher power of the function of absorption in the morning, on which Dr. Combe lays so much stress. The effect, whatever the cause, should be remembered by those in attendance on patients affected with fever, and a little coffee or other refreshment should be allowed to all persons engaged in such perilous duties.

The commercial part of the community may read with great advantage Dr. Combe's remarks on the pernicious habit, previously and

strongly pointed out by Dr. Paris, of taking exercise after many hours' confinement to business, and while yet they have not dined. Upon the whole, we should agree with Dr. Combe, that those who breakfast at nine should dine at two. But many are engaged in business or in pleasure, and have not time to dine at two, or imagine that they have not, because they consider that dinner ought to be a very substantial meal; and, after such a meal, men are more inclined to sleep than to work. We must therefore compound with them in these circumstances, and delude them, as they love to be deluded, with names. Call a light dinner *luncheon*, and the man of business finds time for it, and the man of fashion no longer disdains it. Call an early supper a late *dinner*, and the merchant and the senator will sup contentedly, but by far too luxuriously, at the time when peasants sup. From the excess of this last meal, to which no exercise succeeds, the voice of the physician, charm he ever so wisely, cannot warn them, until auxiliaries rise up in the shape of gout or gravel, and rich men grow virtuous in spite of themselves.

At the same time, Dr. Combe very justly observes that those who sit up a great part of the night require food at later hours; and every one must have experienced the welcome refreshment of supper at a fashionable party. Sometimes, indeed, the exhibition of hunger, even in refined circles, towards two o'clock in the morning, is irrepressible; and, whilst it furnishes a scene for the writer of a novel, affords instruction, as every other scene does, to the physiologist.

The refinements of dietetic writers have often excited a suspicion, which daily observation has a tendency to confirm, that, after all, it is the *quantity* of food taken, or of particular kinds of food, that is the most common cause of the inconveniences ascribed by different authorities to different articles of diet. It would be endless to recount the extravagances of some of the foreign writers concerning the effect even of some of the commonest articles of subsistence. According to one, the prevalence of consumption in England is to be ascribed to the habitual use of butter; but of such follies any notice is, we trust, superfluous. We place no very great reliance on the rule of leaving off eating with an appetite; and still less on Dr. Beaumont's refined distinction between leaving off with "satiety," which he pronounces pernicious, and with "perfect satisfaction, ease, and quiescence of body and mind," which he declares to be signals for desisting from eating. We profess an incapacity quite clearly to discriminate between *enough* and *satiety*. We know that our lexicographers define satiety to be *more* than enough; but we distrust the memory of people who are at dinner concerning these nice points. The best rules are, perhaps, to eat slowly, and not to partake of too great a variety, and not to drink much or anything at meals. The last rule cannot always be rigidly enforced; but we believe its virtue to consist in the smaller quan-

tity of food to which it limits the desire of the person dining. By observing these rules, few people would err greatly on the side of quantity; whereas, rapid swallowing, varieties of food, and large supplies of fluid stimulants, inevitably lead to the overloading of the stomach.

Dr. Combe's usual good sense does not desert him on these important matters. He abjures all universal systems of diet, either as regards quality or quantity, observing that, in different ages, after different degrees of exertion, and in different ranks and circumstances, different rules must be observed. Infants require frequent supplies of food; but every day shows us the bad effect of the excessive feeding to which these helpless creatures are subjected. The Esquimaux system is indeed literally practised upon them; they are crammed until their very mouths can hold no more. Hence ensue vomitings and what are called bilious attacks in very young children, for which they are submitted to calomel and various purgatives, in default of any correction of the bad habits of the nurse or the mother. All the time, too, the nurse is carefully fed, and expected to drink ale or porter, or even gin, to increase the quantity of milk. We are strongly impressed with the belief that it is this mismanagement of their own diet, rather than affording milk to an infant, which causes the mother so frequently to find her constitution impaired by nursing. There are doubtless cases in which mothers, from absolute debility, are unfit nurses; but we should be disposed to maintain that no healthy woman requires an unusually full diet to enable her to secrete sufficient milk for the nourishment of her child; and that, when this cannot be done upon good diet, without the unusual indulgence of strong fermented liquors, or of ardent spirits, it would be much better, both for the mother and the child, that the latter should be brought up by hand.

We do not think that practitioners are fully aware of the silly and hurtful excess in which women in very respectable classes of life indulge themselves, on the plea of being nurses. Much of this is occasioned by the prevalent mistake, so well dwelt upon by Dr. Combe, that every expression of uneasiness on the part of an infant is an indication of hunger, and that, whenever it opens its mouth, the mouth ought to be filled with food. It would be well if all mothers and nurses would read and remember his observations on the feeding of newly-born infants. We have indeed often witnessed with sorrow the eagerness displayed to load and to unload the stomach and bowels of a poor child, which has only within an hour seen the light. The contest seems to be, who shall first introduce it to the sufferings of colic or the miseries of medicine. It would be ludicrous, if it were not really horrible, to behold an able-bodied nurse giving a helpless infant a welcome to this world of trial in the shape of a dose of castor-oil. With this system of feeding and physicking, so far from wondering at the mortality among infants,

one is almost inclined to regard it as a merciful provision against the continuance of such ignorant tyranny.

Passing over many valuable remarks on the quantity of food adapted to the years of growth, and to subsequent periods of life, we turn from the effects of over-feeding to the more pitiable effects of a want of proper nourishment; effects too little reflected upon even by medical men. We can add nothing to the force of the following observations: they ought never to be forgotten, and contain truths to which legislators are only now beginning to pay a tardy attention.

“If over-feeding be the prevailing error among the middle and higher classes of the community, the opposite condition is as unquestionably that of a large proportion of the labouring poor. Pressed upon all sides by the powerful competition both of constantly improving machinery and of a superabundant population, the manual labourer is impelled to undergo an amount of ever-recurring bodily exertion which far exceeds the natural powers of his constitution, even when supported by the fullest supply of nourishment; and when, as often happens along with this excess of labour, his food, from inadequate wages, the size of his family, or his own injudicious management, is defective in quantity or in quality, the consequences to his health and happiness are disastrous in the highest degree.

“To those who have never reflected on the subject, it may seem like exaggeration to say that, as a general fact, at least nine-tenths of the lower orders suffer physically, morally, and intellectually, from being overworked and underfed; and yet I am convinced that the more the subject shall be investigated, the more deeply shall we become impressed with the truth and importance of the statement. It is true that very few persons die from actual want of food; but it is not less certain that thousands upon thousands are annually cut off, whose lives have been greatly shortened by excess of labour and deficiency of nourishment. It is a rare thing for a hard working artizan to arrive at a good old age. They almost all become prematurely old, and die off long before the natural term of life. It is in this way that, as remarked by Dr. Southwood Smith, the mortality of a country may be considered as an accurate indication of the misery of its inhabitants. According to Villermé, the rate of mortality among the poor is sometimes double that among the rich. Thus it is found, he says, that in a poor district in France one hundred die, while in a rich department only fifty are carried off; and that, on taking into account the whole population of France, a child born to parents in easy circumstances has the chance of living forty-two and a-half years, while one born of poor parents can look for no more than thirty.

“These are striking facts, and their truth is confirmed by every day's experience in Britain as well as in France. Many causes concur to produce this melancholy result, but among the principal is unquestionably the disproportion so generally existing between toil and nutrition. In the army the operation of the same principle has long been recognised in the inferior strength and health of the privates compared with the officers.

The officers, being better fed, better clothed, and better lodged than the common soldiers, bear up successfully against fatigue and temporary privations by which the latter are overwhelmed. During epidemics, too, the poor, from their impaired stamina, almost invariably become victims in a proportion far exceeding that of the more wealthy classes. This is, no doubt, partly owing to their greater intemperance and want of cleanliness; but even these vices often derive their origin from the same root—the want of adequate repose and comfortable sustenance.

“The bad consequences of defective nourishment are not confined in their operation to the bodily constitution of the labouring poor. *Their minds also are deteriorated.* The pressure of poverty is unfavorable to the growth of refinement and morality, and crime and turbulence are never so much to be dreaded as during times of scarcity and manufacturing or agricultural distress. Bodily health, satisfied appetite, and peace of mind, are great promoters of individual morality and public tranquillity; and whenever these are encroached upon in any great class of the community, discontent and crime are sure to follow. In legislation this principle is seldom attended to, and laws are consequently enacted merely for the suppression of the result, while the source from which it springs is left altogether unnoticed and in the fullest activity.

“Among the poorer classes, the children as well as the parents suffer much both physically and morally from insufficient food. Their diet, being chiefly of a vegetable nature, and consisting of porridge, potatoes, and soups, with very little butcher-meat, proves far from adequate to carry on vigorous growth in the one, or repair waste in the other; hence arise in the young an imperfect development of the bodily organization, a corresponding deficiency of mental power, and a diminished capability of resisting the causes of disease. In workhouses and other charitable institutions, ample evidence of these deficiencies obtrudes itself upon our notice, in the weak and stunted forms and very moderate capacities of the children. Under an impoverished diet, indeed, the moral and intellectual capacity is deteriorated as certainly as the bodily; and a full exposition of this fact, and the principles on which it is founded, would be a great public benefit.” (P. 234.)

In the chapter on the Kinds of Food, Dr. Combe recurs to the subject of infants and nurses; and, if his book contained no other good advice, this part of it alone ought to recommend it to every family. There is a singular disregard of certain tolerably plain indications of nature in much that relates to infants and children. Infants delight in nothing so much, for example, as lying on the nurse's lap divested of clothing. A purer picture of happiness cannot be conceived than that presented by an infant in this situation; yet it is condemned to complicated clothing, by which its skin and limbs are compressed and irritated. The child of older growth cries in the cold, and is yet condemned to long walks in cold air, and sometimes to a cold bath daily. But the errors as respect the food proper for infants are yet more remarkable. Generally they are fed on food so much thicker than the milk of the mother, that their digestive organs are seriously discomposed by it; and they are often kept on the mother's milk until long after teeth have appeared,



which nature has furnished for the purpose of biting and masticating. To some, animal food is given before the teeth have well appeared; and to some it is denied long after thinner aliment has evidently ceased to afford nourishment. Mothers of the poorer class are continually applying at dispensaries for medicine for children of twelve or eighteen months old, whose health is merely deranged by their not being weaned; and we fear that Dr. Loudon's late ingenious recommendation to limit the population to the sustenance of a country may be opposed by irresistible arguments, drawn from the effects of long-continued nursing on the mother. Another circumstance to be taken into consideration, too, is that mothers often prolong the period of nursing with the exact intention for which Dr. Loudon recommends it. They wish to limit the population of their own cottage to the sustenance. But, in numerous cases the plan does not succeed; and the uterine system, after a certain period allotted to nursing, claims an ascendancy over the mammary; a fact of considerable physiological interest, and on which it would be easy, and not without use, to collect precise statistical details in lying-in institutions.

These observations will shew that we do not quite agree with Dr. Combe when he says, that, "in general, weaning takes place too early," (p. 248;) but his directions both as respects the food of infants and of nurses are quite unexceptionable. If he dwells on the mischief which ensues from giving too much food to infants, he does not forget the necessity of a copious supply of good food to older children, and he advocates neither excess nor too sparing a diet. We would here beg to repeat that the best rules appear to us to be, to give growing and healthy children good plain food at regular hours, and to prevent their eating too fast, or drinking too much with their meals, or taking any stimulants; and, in that case, they will seldom eat too much. They require a full measure of food; but, if they are allowed to be active, and much in the open air, their strength, their clear complexion, their cheerfulness, and their balmy sleep at night, will shew that the system is not overloaded or injured. Often as the subject spoken of in the following extract has been of late presented to the attention of the medical and even of the general reader, we cannot refrain from again urging continual attention to it. On these points, medical men are the teachers of the community; a proud privilege, and which should not be neglected, for the teaching relates to health and to happiness.

"The prevalent and pernicious custom of tasking the minds and confining the bodies of children for hours in succession at home and in schools, at a time of life when the growth of the body and the welfare of the system require constant and playful exercise in the open air, and perfect freedom from care and excitement of mind, is the fruitful source of much future bad health, and is eminently calculated to defeat the object aimed at by parents, namely, the mental excellence of the child. The premature exertion of intellect to which it is stimulated by the con-

stant excitement of emulation and vanity, far from strengthening, tends to impair the health and tone of the brain, and of all the organs depending on it; and hence we rarely perceive the genius of the school manifesting in future years any of the superiority which attracted attention in early life; but we find them, on the contrary, either sunk below mediocrity, or dragging out a painful existence, the victim of indigestion and melancholy. On the other hand, some of the most distinguished men who ever lived were in childhood only remarkable for health, idleness, and apparent stupidity. The illustrious Newton was, by his own account, an idle and inattentive boy, and 'very low in the school,' till he reached twelve years of age; and the young Napoleon himself is described as 'having good health, and being in other respects like other boys.' Adam Clarke was considered 'a grievous dunce' when a boy, and was seldom praised by his father except for his ability in *rolling large stones*, which his robust frame and good health enabled him to do. Shakspeare, Gibbon, Byron, Scott, and Davy, were in like manner undistinguished by precocious genius, and were fortunately allowed to indulge freely in those wholesome bodily exercises, and that freedom of mind, which contributed so much to their future excellence." (P. 254.)

Dr. Combe frequently refers to Dr. Clark's admirable observations on diet and regimen as a means of preventing scrofula and consumption; ends so important, that we cannot but hope some good has already been effected by Dr. Clark's remarks. In families which have already suffered the deep affliction of seeing one or two of the younger members sinking under pulmonary consumption, no words could add to the awful interest attached to any directions by which a chance is afforded that the survivors may be spared.

On the subjects of particular articles of diet, and on the conditions to be observed before and after eating, we do not observe much in the pages of Dr. Combe which has not previously and for some time been familiar to all medical readers. We need scarcely say, that we attach no great importance to those of Dr. Beaumont's experiments which demonstrate the superior digestibility of raw cabbage; although we cannot but offer our congratulations to Dr. Lambe on such a confirmation of opinions which that very respectable physician is well known to have consistently maintained for many years, both in theory and practice, although with the effect of making very few converts.

In a chapter on the subject of Drinks, Dr. Combe refers to the experiments of Dupuytren and Orfila, in support of the opinion that thirst is very much dependent on the quantity of fluid circulating in the vessels. Dupuytren succeeded in allaying the thirst of animals by injecting milk, whey, water, and other fluids into the veins; and Orfila frequently, in the same manner, allayed the excessive thirst of animals to which he had administered poison, and which were incapacitated from drinking by the œsophagus being tied; and he found that, the more the abstinence from liquids was prolonged, the more the blood was deprived of its watery portions. Dr. Combe, however, guards his readers from the error of drinking fluids to ex-

cess, although in obedience to what may seem a natural want of them in the system. We have already said, with reference to a well-known precept of Mr. Abernethy, that, by drinking little at dinner, less solid food will also be taken; and this we believe to be the best effect of observance of a rule which has puzzled many who have obeyed it.

In one of Dr. Beaumont's experiments, a gill of water, at the temperature of 55° Fahr., was received into the stomach, the temperature of that organ at the time being 99°. The water immediately diffused itself over the interior surface of the stomach, reducing the temperature to 70°. After a few minutes, the temperature of the stomach began to rise again; but it did not regain its former level of 99° until half an hour had elapsed. If this effect of so small a quantity of water throws some light, as Dr. Combe observes, on the danger of taking large draughts of water at a lower temperature, it also, we would add, illustrates the action of refrigerants, about which many practitioners are very sceptical. The fact may be also recommended to the reflection of ladies and gentlemen who so fearlessly devour ice immediately after dinner, coupled with the fact supposed to be established by Dr. Beaumont, that, for good digestion, the temperature of the stomach should be about 100°. The warmth or the coldness of fluids swallowed should of course also be attended to; the point of wisdom being that any extreme is hurtful, and, if habitual, more hurtful.

If much fluid of any kind drunk during a meal has the effect not only of causing more food to be taken than would otherwise be required, and if it also, as is generally admitted, dilutes and impairs the efficacy of the gastric juice, it may readily be concluded that, if the fluid taken be itself of a kind requiring the digestive process to be exercised upon it, or if it be of a stimulating quality, it should be partaken of with caution. Those whose practice makes them acquainted with the maladies of large drinkers of ale or porter, are aware that the number and severity of the disorders induced by this kind of excess are not less than what are incurred by persons who indulge much in wine, or even in ardent spirits. The affections induced by an imprudent indulgence in these various stimulants are not the same, but they all indicate an impairment of health, either in the form of dyspepsia, or of evident vascular or nervous derangement. Yet there is much reason to believe that a total abstinence from stimulating drinks is not compatible with the health of many individuals in the circumstances of social and active life. Ardent spirits should unquestionably never be used but as an occasional cordial or needful medicine; and, of the importance of habitual moderation in the use of wine and of malt liquors, no reasonable man can entertain a doubt. Every employment of these beyond the sensation of agreeable refreshment tends to impair the organs or parts of the system on which the particular stimulant chiefly acts. Youth, strong exercise, and an excellent constitution, may postpone

the bad effects of stimulants even in those who indulge with little restraint in their use; but, when middle age is attained, the days of retribution seldom fail to commence.

Dr. Combe's opinions on these subjects are such as we entirely concur in. To most children we believe the use of wine or of any other stimulating drink to be positively injurious, and to young persons it is unnecessary. In active life, some of them may be habitually and moderately partaken of with advantage, and also in life's decline. They have been permitted to man for his use, and for his benefit; and, if his reason is employed to direct that use of them, as of other blessings, the benefit may be enjoyed without any penalty.

It is too well known that stimulants are often resorted to even by persons of cultivated understanding, to cheer them in melancholy circumstances. Of course, by injuring the health, they add to the depression. Partaken of in great moderation, even in such circumstances, they are doubtless sometimes beneficial, rousing the natural energies of the system without exhausting them, and allaying, for a time, the irritability of the mind. By the poor, spirits are taken as their solace and only enjoyment. Those who so laudably wish to wean them from such pernicious and destructive consolation should remember, that the best means of doing so consist in bettering their condition, improving their prospects, and enlarging their mental resources. Without such care, oaths, like precepts, will soon be forgotten.

A short and judicious chapter on the Regulation of the Bowels concludes the work, a chapter rendered necessary by the too general practice of seeking in the daily use of purgatives a substitute for a better ordered diet and daily walking exercise. In this respect modern practice has but too much coincided with popular errors. Nothing is so rare as to meet with a prescription in which no cathartic substances are included. We once inspected a file of prescriptions in the possession of a lady who had been affected with chronic diarrhoea for nearly two years, and found calomel or blue pill, generally combined with a purgative, in every one of them. Women of every degree, but particularly of the middle and higher classes, are accustomed to take daily aperients, neglecting attention to diet, and refusing to take any active exercise in the open air. To such an extent does this very foolish and hurtful plan prevail, especially in large towns, and above all in London, that a practitioner may do nearly the same amount of good by prescribing the discontinuance of medicine as by prescribing any to be taken.

Our notice of Dr. Combe's book sufficiently shews that we think it a useful production. It somewhat abounds in repetitions, and bears, in our opinion, other marks of the kind of expansion generally required in works which follow a successful one by the same author. The most valuable parts of it, considering the readers to whom it is addressed, might have been considerably condensed; or

might even, we think, have been incorporated into the first publication of the kind of which Dr. Combe was the author. For those general readers, however, who will patiently peruse it, the Physiology of Digestion will be found no less really instructive than the admirable Physiology applied to Health and Education. As the author of each of these works, we certainly regard Dr. Combe as a benefactor to the reading public.

## ART. V.

*Médecine Légale, Théorique et Pratique, par ALPH. DEVERGIE, Docteur en Médecine, Professeur agrégé de la Faculté de Médecine de Paris, Professeur de Médecine Légale et de Chimie Médicale, &c. Avec le Texte, et l'Interprétation des Lois relatives à la Médecine, Légale, revus et annotés par J. B. F. DEHAUSSY DE ROBÉCOURT, Conseiller à la Cour de Cassation, &c. Tom. I., Tom. II. P. I.—8vo. pp. 724, 422. Paris, 1836.*

*Forensic Medicine, Theoretical and Practical, by ALPH. DEVERGIE, &c. With the Text, and Explanations of the Laws relating to Forensic Medicine, reviewed and commented upon by J. B. F. DEHAUSSY ROBÉCOURT, &c.*

*Elements of Medical Jurisprudence. By ALFRED S. TAYLOR, F.L.S., Lecturer on Medical Jurisprudence and Chemistry in Guy's Hospital. Vol. I.—London, 1836. 8vo. pp. 511.*

FORENSIC MEDICINE is so progressive a science, that the lapse of a very few years is sufficient to render a treatise upon it obsolete, unless new editions are issued in pretty quick succession. The works before us represent the state of the science very fairly up to the present time, but each in its own way, and that way characteristic of the nations to which the authors respectively belong. The French writer goes into his subject with an evident determination to exhaust it; he remains in the mine till he has worked it completely out, apparently caring little whether the fruit of his toil is immediately applicable to any useful purpose. Less profuse of labour, the English author has industry enough to dig up every particle which he thinks may be turned to account, but not an atom more: he may therefore, from inability at the time to calculate their future uses, leave behind him some valuable substances. Mr. Taylor's book, then, is a more practical compendium, as far as it goes; while M. Divergie's far surpasses it in the abundance and variety of its details. Mindful, however, of the long-established character of comparisons, we shall pursue our parallel no farther, but proceed to examine the merits of these works separately.

To any one at all acquainted with the medical literature of France, the name of M. Divergie must be quite familiar. Besides many valuable contributions to the *Annales d'Hygiène et de Médecine Légale*, he has furnished all the medico-legal articles in the

Dictionnaire de Méd. et Chir. Prat.; a sufficient proof of the consideration in which he is held in his own country. His situation of inspector-physician at the Morgue, (an establishment in which the dead bodies found in the streets and environs of Paris are deposited, in order that they may be identified by their friends,) has afforded him ample opportunities of collecting materials for the elucidation of many intricate questions in forensic medicine. He states, in his preface, that nearly three hundred subjects annually fall under his observation at that institution.

M. Devergie's exordium would lead us to think the definition of Legal Medicine a matter of considerable nicety. He severally criticises the definitions propounded by Mahon and Fodéré, that adopted by Orfila after Prunelle, in the first edition of the *Leçons de Méd. Lég.*, and the altered form which it assumes in the second edition of the latter work; and, having found reason to reject all these, he offers one of his own, which he of course considers exempt from the objections applicable to the others. Mahon and Fodéré define forensic medicine to be the art of applying the principles and maxims of medicine, and its collateral sciences, to the formation of statutes, and to the elucidation and interpretation of certain points of law, (*questions de droit.*) Devergie finds fault with this definition, on the ground that it is not the function of the medical jurist to elucidate or interpret points of law. M. Prunelle's definition runs thus: "Legal medicine is a systematic collection of various physical and medical facts, serving to guide the different orders of the magistracy in the execution and formation of laws." This is open, in our author's judgment, to a twofold charge of incorrectness: 1st. that magistrates are employed in administering justice and enforcing the regulations of police, and that they have nothing to do with the composition of laws; 2dly, that a physician cannot guide the magistrate in the administration of laws, since the application of such and such an article in the law is a *question de droit*, the solution of which, though it must be preceded by certain kinds of information, such as the proof of the *corpus delicti* by the medical practitioner, and the conviction of the criminal by the jury, must, after all, depend upon the judge, who has to determine to what article of the law the crime belongs, and to resolve the different legal questions which arise out of it. We admit the first objection, that magistrates are not *ex-officio* legislators. The force of the second, so far as it bears upon the inability of medicine to assist in the administration of laws, is, we think, without foundation; since, although medicine has nothing to do with the application of the law to a given case, yet, as it establishes the case itself to which the application is to be made, it becomes a necessary, though perhaps a subordinate, instrument in the administration. The more exceptionable part of the definition is, that it specifies magistrates as the officers who are to derive assistance from medical researches; when the persons really aided are those engaged in

collecting and proving the facts of a forensic investigation, to which the law is to be applied. Thus, in criminal cases in our own country, the proper function of the judge is to expound the law, and to direct its execution upon a person who has been found guilty by a jury; this decision having been materially influenced by medical testimony. The modification which Orfila's definition underwent in the second edition of his *Lectures* is as follows: "Legal medicine is a collection of medical facts calculated to throw light upon various points of law, and to direct legislators in the framing of statutes." The latter clause is faultless, but we agree with Devergie that the former is open to the objection already stated. M. Devergie proposes the following as free from all exceptions: "Legal medicine is the art of applying the information derived from physical and medical science to the composition of certain laws, and to the ascertainment and elucidation of certain facts in judicial investigations." In order to illustrate the manner in which medical facts are brought to bear upon juridical enquiries, he traces the progress of a criminal case through the different legal processes; and, as it presents a forcible contrast to the method of investigation pursued in this country, we shall make an abstract of it.

A person having been found dead in his chamber; the *Commissaire de police* directs a medical practitioner to repair to the spot, and to confirm the fact of the demise and the nature of the death. If there are marks of wounds inflicted during life, the practitioner takes note of them, but without forming any positive conclusion respecting the cause of death: he confines himself to a description of the external appearances, and points out the necessity of opening the body. His report is sent to the *Procureur du roi*, and, if there are reasons for suspecting unfair play, this officer, or a *Juge d'instruction*, directs two practitioners to perform the necropsy, either in his own presence or in that of his deputy. A second report is drawn up, which consists of a statement and explanation of the appearances, and of the conclusions to which they give rise. These two reports may present many subjects of doubt, for the solution of which the judge orders two or more practitioners to give their opinion of the previous reports; and at the same time furnishes them with all the documents in his possession capable of throwing light upon the enquiry. This is called a medico-legal consultation, in which, after a discussion and exposition of the facts, conclusions are formed either confirmatory or contradictory of those of the first examiners. Having obtained these documents, and collected the evidence of other witnesses, the judge draws up a faithful recital of the depositions both for accusation and acquittal, and submits it to the *Chambre de conseil*, composed of three *Juges du tribunal de première instance*, where it is determined whether the case shall be prosecuted. Having decided in the affirmative, this chamber also decrees whe-

ther the case shall be tried at once in the chamber of correctional police, or be carried into the court royal. If the affair is one of a very serious description, and consequently must be tried at the assizes, the Procureur général presents, either in person or by deputy, all his documents to the Chambre des mises en accusation, composed of counsellors of the court royal; and, as soon as this chamber has determined upon the further prosecution of the case, the accused person is brought before the court of assize. On the day of audience, all the medical practitioners appointed by the Commissaire de police and by the Juge d'instruction to make reports appear in succession as witnesses. The written reports being now considered in the light of mere materials of instruction, the witnesses testify *vivâ voce* of all that they related in the *procès-verbaux*. They answer interrogatories put by the jury, the judges, and the Procureur du roi; these questions being generally suggested by the depositions of previous witnesses, and in explanation of new facts that may have been elicited during the investigation. The trial is then closed.

If we compare this course of enquiry with that which in a similar case would be followed in our own courts, it can scarcely fail to strike us that fewer faults, both of omission and commission, are likely to be committed in the former; for the obvious reason, that the examination of the medical facts is consigned to the persons best qualified both for discovering and estimating them. We intrust to our coroner's inquest the charge of doing all that in the French prosecution precedes the submittal of the documents to the Chambre des mises en accusation, which answers to our grand jury. In other words, the coroner's inquest is responsible for as much as the two successive reporters, the persons engaged in the medico-legal consultation, the Procureur, the Juge d'instruction, and the Chambre de conseil. Without insisting upon the important consideration that, by passing through so many hands, the facts must be more nicely sifted, the medical information is of the fullest and most exact description. But how often have we seen the ends of justice defeated by the constitution of the coroner's inquest! Sometimes the medical witness is over-cautious or niggardly in his spontaneous statements; and, therefore, whether all that he knows shall be elicited depends upon the coroner and jury, who are probably altogether incapable of putting the proper interrogatories. The statement is given in non-professional language, (or, if otherwise, is apt to be treated with derision and contempt,) and consequently must be often scanty and equivocal. The early reporters in the French procedure are aware that their document is liable to be submitted to the critical examination of their brethren. They describe and interpret the facts according to the rules of the science, not in accommodation to the ignorance of other functionaries. A bare statement of facts may suggest a



very erroneous idea to a mind unaccustomed to the survey of such facts, and may need a specific explanation on the part of the narrator; but it is a chance whether this explanation will be called for at the inquest, and medical witnesses may with some reason be wary of volunteering opinions, especially if they bear hard upon the accused. But, if the mental character of the witness is of a different kind, if he is hasty in inferring and rash in communicating, how will his declarations meet with the qualifications which they so much require, or his opinions be duly canvassed? If he chance to bear a reputation for sound sense and professional skill, his erroneous or prejudiced views—views, moreover, which he may hereafter find reason to modify,—will pass current, and an innocent person may lie in a dungeon till a trial can acquit him; or a culprit may altogether escape the vengeance of the law. It has often been agitated whether the function of a coroner should be executed by a medical man instead of a legal practitioner. We think that the arguments for both are nearly balanced, for the plain reason that the function is twofold. It is our earnest hope that no long period will elapse before the present duties of the office shall be so separated as not to be discharged by a single individual, and that there shall either be a medical as well as a legal coroner, or that the whole medical examination of the case shall be transacted by a body of men qualified for the purpose, either by their general professional attainments or by their particular education, like the *state-physicians* of Germany. Even if it were needless in ordinary cases, we hold such an alteration to be absolutely essential in cases involving medical *responsibility*. Our own observation of inquests held upon persons suspected to have died of *mala praxis* has taught us that the legitimate inferences from the facts actually deposed may entirely escape the coroner and the jury, for want of professional knowledge; so that at one time an atrocious charlatan may come out of the inquiry not only with impunity but even with eclat; and at another time a well-informed and humane practitioner may receive an undeserved but indelible blot upon his professional reputation.

Our author laments that legal medicine is not yet taught practically in France. He glances at the curriculum of study requisite for learning the sanatory branches of the profession, and then contrasts it with a course of medico-legal instruction. In the latter there is nothing practical, excepting perhaps what relates to toxicology. But of what does even this important part of the course consist? Of a succession of precipitates, which appear and disappear before the astonished eyes of the pupils, not one of whom is ever called upon to perform a chemical experiment, or to examine the body of a person drowned, hanged, or suffocated. "We have good reasons," he says, "for insisting that we require for medico-legal education something corresponding to the clinique of

hospitals, in which pupils might find the same means of practical instruction as are afforded for medicine in general."\* If these strictures are needed in France, they apply much more strongly to the British schools of medicine.

We pass over some forcible observations, in which M. Devergie censures the still insufficient attention paid to this department of medicine, and in which he urges the necessity of making it a separate object of study, and argues that a good physician or surgeon is not by necessity a good medical jurist. He regrets that there are no public functionaries in France corresponding to the state-physicians of Germany; for, notwithstanding the precautions taken for a thorough examination of the medical facts by separate sets of reporters, &c., the *first* observations, and therefore the most important, are often intrusted by the officers of police to practitioners very inadequately qualified for the duty. Hence the examination of the bodies is often incomplete, and facts of the greatest value to forensic medicine are utterly lost. He suggests the appointment of three orders of medical jurists: one to be attached to the court royal; another to the Tribunal de première instance; a third to be at the disposal of certain magistrates, such as mayors, Juges de paix, Commissaires de police, and Officiers de gendarmerie. We have often weighed the desirableness of such appointments for this country; but, while by no means blind to their advantages, (which indeed must strike every one who at all considers the subject,) we are disposed to think that very serious evils might result from them. One of the first effects, unless we are greatly mistaken, would be to render forensic medicine a matter of comparative indifference to all but those who look forward to an official exercise of this department of the profession. Now, it must necessarily happen that, however great the number and the activity of the medico-legal officers, the witnesses of many important facts must be persons engaged in ordinary practice. If a man is found apparently dying or dead, the first idea of the friends or spectators is not, whether he is to become the subject of a future judicial investigation, but whether any thing can be done towards his recovery; and the assistant sent for is not a medical jurist, but a practitioner of the art of healing, during whose attendance many phænomena may present themselves of the utmost importance in a medico-legal point of view, but which may escape his attention, from his want of information upon such subjects. This objection applies still more strongly to cases of illness, in the course of which no suspicion may have been excited in the mind of the attendant, but which would have afforded serious intimations to a toxicologist. Whether it might not be well to appoint officers to examine intricate cases, and to canvass the first reports, is a question upon which we have already ventured our

\* Introduction, p. 11.

opinion. We only object to a plan which would seem to exempt the ordinary practitioner from the responsibility of exercising a medico-legal duty, by the appointment of a special functionary, who, in any given case, may not have an opportunity of observing the facts most essential to its elucidation.

We shall now select from the work before us a few of the special topics, both for the sake of the information which they contain, and to exemplify the manner in which the author has executed his task. To analyse the chapters *seriatim* would occupy far more space than can be afforded to the present article. We shall begin with the remarks upon Putrefaction, a subject which M. Devergie's office at the Morgue has well qualified him to discuss. He observes, that the descriptions given by Fourcroy and Thouret of putrefactive phenomena comprise four principal facts. (1.) The evolution of gas. (2.) Liquid putrefaction and disorganization of the soft parts. (3.) Arrest of putrefaction, and a transformation *en gras*, (adipocire.) (4.) Gradual destruction of the adipocire. The observations of MM. Orfila and Lesueur, on the contrary, assign to the gaseous and liquid putrefaction only an accidental occurrence. According to these distinguished authors, the first change is softening, the second desiccation, the third transformation *en gras*, the fourth and fifth stages are gradual destruction. The discrepancy between these observers Devergie attributes to the fact that most of the bodies examined by Orfila and Lesueur had been buried in winter, but those by Fourcroy and Thouret in summer. In some of Orfila's subjects interment had taken place in summer, but they were exhumed at a late period, when the appearances corresponded to those noticed by the other observers. The difference in short has relation principally to the earlier phases of decomposition. (T. i. p. 115.)

Gay Lussac was of opinion that putrefaction cannot occur in vacuo. Mannors, Luischius, Fourcroy, and Guntz think differently. Guntz introduced his finger into a bell-glass filled with mercury, and then pricked it; blood having risen to the surface of the mercury, the vessel was submitted to a temperature gradually elevated from 15° to 30° (Reaumur.) The blood coagulated, and at the end of five days became liquid, dirty, and homogeneous, with bubbles of air upon the surface. Of all the gases, oxygen, according to Bäckmann and Hildenbrand, is most conducive to putrefaction, but its power is greatly increased by the presence of nitrogen, which, however, appears to exert no other action than that of separating the molecules of oxygen. An analogous fact is presented by hypophosphoric acid, which is formed very readily when its base is in contact with a mixture of oxygen and azote, but not at all when submitted to pure oxygen. Hildenbrand found that meat putrefied completely in eleven days when exposed to this gas in a state of purity. Unmixed azote appears to retard rather than to favour putrefaction; hence this process is slow in privies. Hy-

drogen, carbonic acid, and nitrous acid, are equally unfavorable. It is well known that electricity accelerates the process. Muscles subjected to a current of it are after a time deprived of their salts; the oxides going to the negative pole, the acids to the positive. In its ordinary action upon animal matter, it most probably alters the composition of the proximate principles; thus, in milk, it develops acetic acid. M. Matucci observes that portions of meat placed upon zinc plates remained fresh for a long time; the meat, being electro-negative, repelled the oxygen. Aqueous vapour is highly favorable. Gay Lussac found that he could retard putrefaction for a considerable period in a bell-glass containing at the bottom chloride of calcium. Devergie attributes to the solvent power of water its agency in promoting putrefaction. A stream delays the change, probably by removing the putrid particles first formed (which, if remaining in contact with the particles not decomposed, would hasten the process,) and at the same time guarding the substance from the contact of air. Chlorine retards by forming a white pearly compound almost imputrescible; deutoxide of nitrogen has a similar influence by absorbing oxygen; and sulphurous acid, by transforming the matter into a substance highly oxygenated.

The account given of Saponification contains nothing that need detain us. The reader will find a far more ample and exact discussion of the subject in the work of MM. Orfila and Lesueur. Neither shall we analyse or extract from the section on putrefaction of bodies underground, as it is avowedly a mere abstract of the researches of those indefatigable observers. Forty-seven pages are a literal transcript from the "*Exhumations Juridiques*," detailing the successive changes which the several organs and tissues undergo, and the modification of these changes by a great variety of circumstances.

We shall pass on to the author's observations upon putrefaction under water, a subject to which he has paid particular attention, and upon which he has more than once published in the *Ann. d'Hygiène et de Méd. Lég.* He arranges the phenomena of the putrefactive process in water under nine distinct heads: 1. *Green* putrefaction. This commences in the skin, and appears first over the sternum, gradually extending to the face, the neck, abdomen, shoulders, groins, arms, and legs, in the order in which these parts are named. (We may mention that, in atmospheric putrefaction, a different order is observed, being as follows: abdomen, groins, inferior region of the chest, neck, thighs, anterior part of the chest, legs, arms, and face.) It sometimes penetrates from the skin to the superficial muscles, but rarely to the deeper-seated, other phenomena having previously occurred. The green surface is often traversed by dark blue or black lines, caused by decomposition of blood in the vessels. The period at which this change takes place is about the third day in summer, and the twelfth or fifteenth in winter.

2. *Evolution of gas.* This occurs particularly in the stomach, intestines, lungs, and heart. In winter this change is much less marked than in summer. The pressure of the gas is often so great as to drive the blood back from the larger trunks into the smaller veins and capillaries, causing injection, imbibition, and general reddening of various tissues, more particularly in the cavities. These effects will of course be greater in proportion to the quantity of blood in the venous system; and hence we may derive hints as to the nature of the death, whether asphyxial or syncopal. The gas developed in the lungs may expel from the trachea the watery foam characteristic of death by submersion. Hence, in summer, we should be cautious of founding any positive opinion upon the absence of this sign. Chaussier attributed the transudation and the consequent reddening of the mucous membrane in drowned bodies to the peculiar fluidity of the blood. The period for the disengagement of gas is in summer about the fourth or sixth day, while in winter it may be delayed to the sixth or even the eighth week. It is obviously for this reason that bodies are observed to float much sooner in the former season than in the latter.

3. *Brown putrefaction.* This commences in the same parts as the green, but it is less disposed to spread, being for the most part overtaken by saponification. It seldom penetrates below the skin. Green and brown are the most usual tints, but they are sometimes interspersed with yellow, blue, and violet. The *brown* is attended with softening. The time of its appearance is about the first month in winter, and the tenth or twelfth day in summer.

4. *Putrilage*, which consists in liquefaction of the parts previously invaded by the green and brown putrefaction. It commences in the skin of the forehead, and extends in succession to that of the eyelids, nose, lips, clavicles, sternum, cartilages of the ribs, the abdomen, and groins. The destruction of continuity allows the escape of the gases previously evolved; these however have many other channels of egress, as the natural openings and the pores of the skin. The period is about the second or third month.

5. *Saponification.* The skin, not yet disorganized, becomes opaline, dense, and unctuous. The progress of liquefaction is arrested, and the volume of the parts increased. The muscles shrink and assume a rosy colour. The bones, where exposed, appear bright red. All the internal organs are more or less shrunk. The skin of the legs often becomes dense and of a yellow colour, presenting an appearance like parchment. The period is from the third to the fourth month,\* being generally earlier in women, on account of their greater inclination to obesity.

\* We must remind our readers that the period assigned by the author to the adipocirous process, does not refer to the formation of the substance under all circumstances. It is well known that Sir G. Gibbes's experiments led him to state that six weeks was a sufficient period for its production; but that gentleman operated upon detached portions of animal matter. M. Devergie's observations are confined to the change as it ensues in a body which has remained entire.—(Rev.)

6. *Desiccation*. This is often so considerable that the proper covering of some of the viscera, as the liver and the spleen, confine the putrid matter into which those organs are decomposed. It begins about the fourth month, but by this time the process of saponification has been penetrating the intermuscular cellular membrane. The muscles alone escape desiccation; they are red, glistening, moist, and yet not easily torn.

7. *Corrosions*, which have generally a granular surface. When caused by the solution of saponaceous matter, they are round and of small extent; when resulting from liquid putrefaction they are irregular and more extensive. The period is about the tenth week.

8. *Incrustations*. The substance of which these deposits are formed is a calcareous soap, resulting from a double decomposition between the sulphate and carbonate of lime derived from the water, and the margarate and oleate of ammonia which constitute adipocere. The skin is much thickened, while its density is increased to a degree that renders it even sonorous when percussed. The bulbs of the hair are singularly enlarged, presenting however a diversity of appearance according to the part of the body. Thus, upon the abdomen, they are disposed like small quills overlapping each other; on the thighs, they are less prominent, but more rounded; on the shoulders and back they are smaller, pyramidal, pointed, and arranged side by side. About the same time that these formations occur, saponification has invaded the muscles; those which are sheathed by aponeuroses being least transformed. The period is between four and five months. The brain is at this time entirely saponified, and the bones are very friable. The lungs are reduced to one-tenth of their natural volume; the cartilages of the trachea are separate; and the stomach and intestines are nearly destroyed.

9. *Destruction* of the soft parts generally. This is effected by the solution or detachment of the saponaceous matter, which leaves the bones almost bare. It occurs first upon the head, and afterwards upon the chest, abdomen, and extremities.

M. Devergie next adverts to the circumstances which modify the putrefactive process in water. We shall specify a few of these:—

1. The extent of the coverings of the body. The boots of men and the corsets of females are a great protection. The author states that he once met with the body of a female, in which, although it had been submersed five months and a half, the skin upon the trunk was quite natural; while upon the head it had undergone saponification, and upon the thighs and legs was covered with calcareous incrustations. 2. Stagnant water accelerates those stages of putrefaction entitled green, brown, and liquid. 3. The changes above detailed do not necessarily observe a certain order of sequence: they may be grouped, however, into two classes, mutually independent; the one comprising green, brown, liquid, and gaseous putrefaction; the other comprehending saponification, corrosion, desiccation, and incrustations. The former always affect the same

parts, but they may be wanting in some cases; notwithstanding which the latter will occur, so that the former are not necessary antecedents. It must be mentioned, however, that the author has never witnessed a case of saponification throughout the body, without any liquid putrefaction. 4. An elevated temperature hastens the green, brown, liquid, and gaseous putrefaction, and consequently renders the body more disposed to float. In summer it is rare to meet with a body that has been more than three weeks in the water. 5. Whether the formation of gas is a constant phenomenon has not been ascertained. In winter, bodies often exhibit so slight a destruction of the skin, as to intimate that little or no liquefaction has taken place; a process which is known to be much favored by the production of gas. 6. The seasons of summer and winter produce at least a month's difference in the period at which the changes occur. 7. Saponification is often prevented in summer by the floating of the body. 8. Integrity of the skin is essential to the saponification of the whole body. 9. Saponification and desiccation occur more readily, *cæteris paribus*, in young subjects, and in those abounding in fat.

It was observed by M. Orfila, that putrefaction is less rapid in the water of privies. This fact is attributed by Devergie to the presence of a large quantity of ammonia, which retards the liquid putrefaction, but favours the production of adipocere. He arranges the different media with reference to their power of favouring putrefaction in the following order:—Air, manure, the water of privies, stagnant water, running water, earth.

We cannot follow the author through his account of the changes which particular organs and tissues undergo during their immersion in water. He mentions the curious fact, that the pulsatious matter into which the brain is converted may find its way into the veins, and even reach the vena cava. We must find room, however, for the following table of the changes characteristic of particular periods. The reader will bear in mind that it is applicable only to bodies submersed during the winter months.

1. *From three to four days.* Loss of animal heat, rigidity, no contractility under the galvanic current; epidermis of the hands beginning to whiten.

2. *From four to eight days.* General flexibility. Colour of the skin natural, but the epidermis of the *palms* very white.

3. *From eight to twelve days.* Flaccidity. Epidermis on the *backs of the hands* beginning to whiten. Face softened, of a dull white colour, and in this respect differing from the rest of the skin.

4. *About fifteen days.* Face slightly soddened (*bouillie*), and here and there red. A greenish tint upon the middle of the sternum; the epidermis of the hands and feet entirely white, and beginning to wrinkle.

\* It must be remembered that the author includes saponification in the putrefactive changes; otherwise, after the observation just made in the text, it would be an inconsistency to give the precedence to the water of privies.—(REV.)

5. *About a month.* Face brownish-red, eyelids and lips green; a brown-red patch surrounded by green on the anterior part of the chest; the epidermis of the hands and feet white, swollen, and wrinkled, as if by poultices.

6. *About two months.* Face brownish and tumefied; hairs loose; epidermis of hands and feet nearly detached, nails still adherent.

7. *Two months and a half.* Epidermis and nails of the hands detached; also the epidermis of the feet, *but not the nails.* In females, redness of the subcutaneous cellular membrane of the neck; partial saponification of the cheeks and chin; superficial on the mammæ, groins, and anterior surface of the thigh.

8. *Three months and a half.* Destruction of part of the scalp, eyelids, and nose. Partial saponification of the face, neck, and groins. Corrosions. Epidermis of the hands and feet entirely removed, and the nails separated.

9. *Four months and a half.* Saponification of nearly the whole of the face, neck, groins, and anterior parts of the thighs; commencement of incrustations on the thighs, and of saponification of the anterior lobes of the brain. The skin of an opaline colour. Detachment of nearly the whole scalp. The skull beginning to be friable. (T. i. p. 227-228.)

This table was first published in the *Annales d'Hygiène* for 1830; and the author now informs us that he has found no reason to doubt its accuracy. The readers of the "*Exhumations Juridiques*" may remember that M. Devergie is made the object of some severe strictures for presuming to fix any dates to putrefactive processes, which must be influenced by a great variety of modifying circumstances. Devergie contents himself with observing that the correctness of his table has been tested, not only by himself, but also by others; that, in fact, the period at which persons had been drowned has been determined with considerable precision, by comparing the appearances which their bodies presented with the statements alluded to.

The author has not as yet been enabled to construct a similar tabular arrangement of the changes which take place during the summer; but he has made a few general observations worthy of attention. In the course of ten or twelve days in summer, putrefaction has been as far advanced as we generally find it after six weeks in winter. The face is puffed and of a brownish colour, the eyelids are swollen, and the lips voluminous. The whole body also is more or less swollen, the skin bears an opaline tint; a green spot may be observed upon the sternum, and the epidermis of the hands is quite soddened. Thus, there is a difference of at least twenty-two days in the time requisite for producing these appearances. The other observations we shall put into the form of a table.

<i>In Summer.</i>	<i>In Winter.</i>
5 — 8 hours	3 — 4 days
24 hours	4 — 8 days
48 hours	8 — 12 days
4 days.	15 days.



The changes in spring are somewhat intermediate to those observed in summer and in winter; but they are considerably affected by the previous season. If the winter has been very severe, the progress of putrefaction will be slower in the following spring. It is not, however, equally true that a hot summer renders putrefaction more rapid in the ensuing autumn; a fact which is accounted for by the well-known law, that water is more easily cooled than heated by an agent applied to its surface.

In calculating the period of submersion, we must always take into account the length of time during which the body has been exposed to the atmosphere after its removal from the water. Five hours only are sufficient to produce a very remarkable alteration of the appearances, more particularly in the earlier stages of putrefaction. Saponification for obvious reasons undergoes little or no change from this cause.

We have devoted a large proportion of our space to these observations, because we believe them to be comparatively novel to the majority of English readers. At first sight, they may appear superfluously minute, and tending to prove little more than that French investigators are not easily disheartened either by the laborious or the disgusting nature of their researches: but a very little consideration must be sufficient to convince us that any means of enabling us to determine with greater precision the period at which an individual died, must be important in a great variety of judicial enquiries, both civil and criminal.

We should have been glad to have made an abstract of the very excellent chapter upon medico-legal dissection, but content ourselves with recommending an attentive perusal of it.

The directions for conducting disinterments for forensic purposes are ample and explicit; but the author makes a rather sudden transition from this subject to that of Rape. He does not appear to have considered it needful to arrange his topics in any very nice order; but, if there can be said to be one principle of connexion more prevalent than another, it is physiological; and perhaps this is the most natural as well as the most convenient kind that he could have adopted, since it admits of his treating at the same time both criminal and civil questions involved in the same subject. Thus, Rape, Impotence, Pregnancy, Infanticide, Abortion, Viability, are connected, inasmuch as they all belong to the generative system; but the judicial questions arising out of them are extremely various, and, if discussed separately under the heads of civil and criminal, would occasion many needless repetitions of physiological observations.

In the chapter devoted to the signs of Pregnancy, we noticed one or two rather important deficiencies. The evidence derived from the state of the nipple is thus summarily discussed: "*Imbrowning of the nipples*. This character belongs to every case, but cannot be turned to account except when the person examined is young

and in her first pregnancy, and when the lips and natural apertures are of a rosy colour, corresponding to whiteness of complexion; for, in brunettes, the nipple almost always presents a dark tint." The author entirely omits certain characters belonging to the part, of far greater consequence than mere colour. It is scarcely necessary to say that we allude to the turgescence of the organ, the development of the follicles, and that soft and almost humid condition of the skin within the areola which is easily distinguishable from the feel of the adjoining epidermis. These signs have been forcibly described by Røederer, and insisted upon by Dr. Montgomery in his admirable monograph upon the evidence of pregnancy, published in the Cyclopædia of Practical Medicine. Dr. W. Hunter placed so much reliance upon the indications of the nipple and areola, that on one occasion, after having declared that the body of a female brought into the dissecting room contained an impregnated uterus, from his observation of the appearance in question, he was not moved from his opinion by the discovery of an inviolate hymen. An examination of the uterus verified his judgment. M. Devergie makes no mention of the projection of the umbilicus in the sixth month, a sign much esteemed by Dr. Gooch; and, when treating of the evidence obtained from dissection, does not enter at all into the much vexed and still unsettled question respecting *corpora lutea*. Upon the disproval of pregnancy he puts a query well worthy of consideration. The sound of the foetal heart, the placental *bruit*, and *ballotement*, together, or even separately, may enable us to affirm with confidence the fact of impregnation; but will the absence of these and other signs justify us in pronouncing a negative with equal certainty? We fear not. It might be asserted that the proof of the gravid condition is wanting, but we could scarcely undertake absolutely to deny its existence.

The section upon Delivery contains nothing that particularly invites our analysis or comments. We shall pass on to an interesting article upon the Duration of Pregnancy, or, in other words, upon precocious and retarded births. The French law determines that, in questions of legitimacy, the 180th and 300th days shall be considered the extreme periods of gestation. We shall confine ourselves to the author's remarks upon the possibility of a protraction of this condition beyond the 280th day. Louis and Bouvart were the first to appeal to analogies in the lower animals, but, unfortunately, their facts which were taken from the writings of Buffon, were by no means correct. It is stated, upon this authority, that mares and she-asses always go eleven months, neither more nor less; cows nine months, deer eight months, sheep and goats five months, bitches two months, hares and rabbits one month. From facts of this nature it was inferred that the laws of nature are invariable, and consequently that a woman must bring forth in the commencement of the tenth month; in other words, that she cannot exceed the 280th day, as fixed by Hippocrates. Later observations, insti-

tuted by Tessier, have proved that naturalists, and Buffon in particular, had fallen into some errors upon this subject. Thus, out of 160 cows observed by Tessier, fourteen calved between the 241st and the 266th day, three on the 270th, fifty between the 270th and the 280th, sixty-eight between the 280th and the 290th, twenty on the 300th, and five on the 308th; so that there was a difference of sixty-seven days between the longest and shortest periods. Similar variations were noticed in the gestation of mares; the difference between the two extremes amounting to no less than eighty days. The most common term for cows was nine months and ten days; for mares, eleven months and ten days. It is worthy of note that, of the cows, five only passed the 300th day, (a fact to a certain degree consonant with the French law,) and it is probable that these animals are placed in circumstances far more favorable to protracted gestation than are women, in whom so many causes, both physical and moral, tend to hasten rather than to retard parturition. M. Devergie, after citing the evidence delivered in the celebrated Gardner peerage case, alludes to a case related by Velpeau of a woman in whom parturition commenced in the ninth month, and was then suspended for three weeks, that is, till the 310th day. It is now, we conceive, placed beyond all dispute that parturition may be deferred till some time after the 280th day. Even if actual facts had been wanting, the position might to a certain extent have been supported by mere *à priori* arguments. Why should pregnancy be more exempt from variation than other physiological conditions? Do the teeth appear at a definite period? The regular interval between the catamenial efforts is four weeks, but how often is this varied, sometimes by disease, sometimes by idiosyncrasy. The fortieth week is the natural period for the termination of pregnancy, and any departure from it is unnatural: but only in the sense that would apply to tardy or premature menstruation. Devergie entertains an opinion that the general law is that parturition shall begin at the tenth menstrual period, believing it to be more natural that the *nisus* should occur at one of the periods of uterine excitement than at any other period. He suggests that enquiries should be instituted as to the duration of pregnancy in women who habitually menstruate every three weeks. If it should appear that the time of gestation is shorter with them than with others, his notion of the existence of a direct relation between the effort of menstruation and that of parturition would receive no little confirmation. The arguments for and against protracted gestation are thus ably summed up. Those who deny the fact in question, urge that nature is unchangeable in her operations, that gestation never varies in the lower animals, that the *foetus*, at a certain point of development, which it always attains in nine months, acts mechanically as a foreign body upon the uterine parietes, and thus provokes their expulsive contractions, just as the chick, when it has undergone development to such a degree that it can no longer procure a sufficient quantity of nutri-

ment from the albumen of the egg, makes its way out of the shell. The advocates of the opposite opinion allege that naturalists have differed greatly in their statements of the length of gestation, not only in the same species, but even in the same variety; that some fix ten months for mares, others from eleven to twelve; and the same remark holds good with regard to cows and asses. Aristotle assigned two months to the bitch, Varro three, and Albertus Magnus from sixty-one to seventy-one days, or even three months. Pliny speaks of five months as the period for some races of sheep, but a later time for others. It is urged, moreover, that the human fœtus, like the young of the inferior classes, is not expelled from the womb till it has acquired a development adapted to extra-uterine existence; that disease and other causes may delay this development; and, consequently, that there is no reason for astonishment if parturition be sometimes retarded.

The foregoing discussion is followed by some remarks upon Superfœtation. After enumerating certain facts bearing upon this supposed condition, the author concludes that there are no well-authenticated examples of its occurrence, excepting under three circumstances. 1st. When the uterus is double; 2dly, in extra-uterine conception; 3dly, when the ovum has not reached the uterus. But, as the possibility of superfœtation in cases in which the uterus is single, and in which the product of one conception is supposed to have already entered that organ, has not yet been absolutely disproved, Devergie is of opinion that the virtue of a mother, and the legitimacy of her offspring, ought, *ceteris paribus*, to have the benefit of the doubt. There would not be much hesitation in an English court respecting such a case as the following, which our author states hypothetically in illustration of the difficult nature of the medico-legal enquiries that might arise out of an instance of superfœtation?

“A woman loses her husband in the ninth month of her pregnancy; she is delivered a few days after that event, and marries again in twenty days from the date of her accouchement. Eight months after her second marriage, she brings forth an infant *bien portant*. Now the question occurs: Does the child belong to the first husband by virtue of superfœtation, or to the second?”

It is almost difficult to treat such a case seriously; but, supposing the three preliminary events to have befallen according to Devergie's statement, we think that the paternity might be determined at once by ascertaining not only that the infant is *bien portant*, but also that it is *à terme*.

The author has done full justice to *Infanticide*, both by the extent and valuable nature of his observations. He commences with a consideration of the phænomena characteristic of the different periods of fœtal existence. It is impossible for us to follow him, even at a distance, through the details into which he has entered, with reference to this department of the subject; more

especially as we discover no great discrepancy in the characters which he has collected, as compared with those presented by former writers, if we except his statements concerning the length of the foetus at different periods, which differ considerably from those of Lecieux. We have in the following table arranged these statements in the manner best calculated to exhibit their difference.

*Length of the Fœtus.*

	Lecieux.	Devergie.
Fifth month . . .	9½ inches	6 to 7 inches.
Sixth — . . .	12 —	9 to 10 —
Seventh — . . .	14 —	11 to 12 —
Eighth — . . .	16 —	13 to 15 —
Ninth — . . .	18 —	16 to 18 —

It is often important to ascertain *how long* a child has survived its birth. The author considers very carefully the signs indicative of the extent which the extra-uterine life has attained in its earlier periods. The following is a summary of the characters:

*After one day.* The withering of the cord has commenced, (in a direction from the summit towards the base.) The cord still united to the umbilical ring.

Foramen ovale . . .	}	all open.
Ductus arteriosus . . .		
Arteriæ umbilicales . . .		
Vena umbilicalis . . .		
Canalis venosus . . .		

*Two days.* Foramen ovale open in eighteen cases out of twenty-two.

Obliteration of ductus arteriosus beginning.

Umbilical arteries advanced.

Umbilical vein open.

Canalis venosus open.

*Three days.* Desiccation of the cord.

Foramen ovale sometimes closed.

Ductus arteriosus rarely quite obliterated.

Umbilical arteries very often obliterated.

. . . vein . . .	}	still open.
Canalis venosus . . .		

*Four days.* Separation of cord beginning.

Foramen ovale open in seventeen cases out of twenty-four.

Ductus arteriosus generally open,

. . . . . partly closed in seven,

. . . . . completely in three.

Umbilical arteries generally obliterated, but sometimes still open in the vicinity of the iliacs.

Umbilical vein . . .	}	considerably contracted.
Canalis venosus . . .		

*Five days.* Separation of the cord generally complete.

Foramen ovale open in thirteen cases out of twenty-nine.

Ductus arteriosus open in half the cases.

Umbilical arteries . . .	} completely obliterated, (occasionally
. . . vein . . .	

Canalis venosus . . . }  
Commencement of changes preparatory to the exfoliation of the epidermis.

*Eight days.* Separation of the cord complete; cicatrization commencing.

Foramen ovale open in five cases out of twenty.

Ductus arteriosus completely obliterated in half the cases.

Vessels closed.

*From the ninth to the eleventh day.* Cicatrization of the umbilicus often complete, but as often a mucous exudation remains until the complete obliteration of the vessels, and may continue till the twenty-fifth day, so that the skin may not be healed till a period still later.

*From the twentieth to the twenty-sixth day.* Complete exfoliation of the epidermis, except on the hands and feet, in which places it may not take place until the fortieth day. (T. i. p. 520.)

We think our readers will allow the following passage to be a very graphic description of the appearances presented by the body of a foetus which had begun to putrefy in the uterus of the mother: it presents some striking differences from the phenomena of putrefaction induced by exposure to the atmosphere.

"This state can never be mistaken by a person who has met with it once or twice only; but, though easy to be recognized, it is somewhat difficult to be described. Let us suppose the little corpse to be extended upon a table. The first appearance that strikes us is an extreme flaccidity of all the soft parts; the head, place it in what position you will, is flattened by mere gravity; the forms of the ribs are perceptible through the integuments; the front of the chest is depressed; the abdominal parietes sink in about the umbilicus, but they bulge out in the iliac regions; the limbs have the same flabby appearance and feel as the other parts. The skin has a peculiar brownish-red colour, without any tinge of green; sometimes confined to the abdomen when the body has not been retained in the uterus for any great length of time after death, but often quite distinct upon the chest, neck, head, and extremities. It is quite different from the brown hue which succeeds the green in ordinary putrefaction, being of a brighter character. The cord is no longer contorted; it is cylindrical, fleshy, flabby, reddish, and infiltrated with a brownish liquid. The epidermis is more or less detached; but, even when still in contact with the skin, it readily peels off, leaving the cutis bare and moistened with a sort of mucous fluid: the colour of the skin under such circumstances is bright red. The epidermis of the feet and hands is white, thick, and wrinkled, as if from poulticing. A reddish serosity pervades the subcutaneous cellular membrane, as well as that which separates the muscles, and sometimes even the muscular tissue itself. The bones of the head are so loose as to be very easily moved upon each other, and the pericranium is easily detached. The cellular tissue of the scalp is infiltrated with a serosity which Orfila has very fitly compared to gooseberry jelly." (T. i. p. 527.)

The following question was once proposed to Devergie by an advocate-general, in a court of assize: "In forensic medicine, to live is to breathe, and consequently, as a medical jurist, you can only infer the life of an infant from the evidence of respiration; but may not a jury derive their proofs of life from other sources than respiration?" Devergie thought proper to answer that the solution of the question did not belong to him, because the law confines itself to asking whether the jury are convinced, without enquiring the grounds of their conviction; and therefore the question is resolved by the mere text of the law. But is a physician authorised in saying that an infant has lived though it has not respired? This question was invested with great interest in the celebrated cause of *Fish v. Palmer*, tried in this country many years ago. But, though the question cannot again be connected with the law of *tenant to the courtesy*, since the latter has been recently annulled, we may have to consider it in relation to infanticide. Our author properly observes, that a period amply sufficient for the operation of causes destructive to the infant often intervenes between birth and respiration. Thus, in some cases, death is caused by the gorged condition of the lungs; in others, by the syncope of the mother during parturition; and, in others, by the anæmia consequent upon maternal hemorrhage. It is possible that a woman might choose to be delivered in a bath, and thus to prevent the respiration of her infant.

"The proofs of life," says Devergie, "in all such instances, must be derived from certain lesions, produced by wounds or other kinds of violence. In some cases these injuries are so very distinct, that it is difficult not to suppose that they were occasioned during life; and, though such cases may be very rare, we ought to keep in mind the possibility of meeting with them. Let us suppose it proved that an infant born at the full time has not respired, but that the body presents a large ecchymosis of the scalp, with *coagulation* of the effused blood, a fracture of one of the cranial bones, a laceration of the dura mater opposite to the fracture, an extravasation of blood upon the surface of the brain, several lacerations of the liver, with effusion of blood into the cavity of the peritoneum, partly liquid and partly coagulated;—I confess that, in such a case, I should be prone to entertain a strong suspicion, if not to consider it an absolute certainty, that the infant was alive at the time the violence was committed." (T. i. p. 531.)

We conceive that the author has allowed himself to be unnecessarily puzzled by the equivocal signification of the term *life*. In the case supposed, there could be but little doubt that the injuries were inflicted during life; but what life? Fœtal or extra-uterine? We have no means of distinguishing the one from the other, but by the occurrence or non-occurrence of respiration. The case in question, then, ought to be considered in strictness with reference, not to infanticide, but to fœticide,—not to the *extinction*, but to the *prevention*, of extra-uterine existence. All fatal injuries committed upon a fœtus which has not respired, whether the lesion has been

the effect of criminal abortion, or of artificial delivery, or of violence inflicted either during labour or after labour, must, in a physiological sense, belong to foeticide. A criminal court, sitting upon M. Devergie's hypothetical case, would have to satisfy itself that the fœtus would have respired but for the injuries sustained just after birth; and, this point having been established, the crime would most probably be treated in the same light as if it had been committed during parturition. We are not aware that any cases have come before the English courts illustrative of this subject.

The possibility of uterine respiration is a topic well worthy of consideration in a discussion of infanticide, since it tends to throw some doubt over the usual proofs of extra-uterine life. The fact of *vagitus uterinus* has been fully established, but some have found reason for questioning whether it necessarily involves the fact of respiration. M. Billard, who first directed attention to the two different sounds composing the cry of an infant, (viz. one produced during expiration, and the other during inspiration,) suggested that a quantity of air sufficient to produce the latter sound might traverse the glottis, and yet not reach the air-cells, and that this feeble penetration of air, though adequate to the production of a uterine cry, would not effect such changes in the lungs as occur in respiration after birth. Devergie, while admitting the distinction between the two sounds, is unable to conceive how the inspiratory cry (*reprise*) could take place, excepting after a full expulsion of air from the lungs, and consequently attended with a more ample instead of a slight respiration. Reasoning upon this subject must be purely analogical, since there are no experimental observations to guide us; that is to say, no examination has been made of the lungs of infants which had presented the phenomenon in question, and died during parturition. The probabilities appear to us to be almost equally balanced, since notwithstanding, in the ordinary cry, the *reprise* succeeds the expiration, yet, in certain kinds of spasm of the glottis, sound is produced only when air enters the passage, as in the crowing inspiration of infants. But, in whatever manner this question may be determined, we doubt whether much practical difficulty is likely to ensue from a belief in the possibility of uterine respiration. The evidence of respiration is of little value in a question of infanticide, unless it is proved that the respiration was pretty complete; for it often happens that children, though born alive, die after a few feeble inspirations, and, consequently, in these cases there may be proofs of respiration in a limited portion of the lungs. The vestiges, therefore, of such an amount of respiration as could take place in the uterus would form but a very small part of the evidence that death had occurred by other than natural causes. Besides, it must never be forgotten that, in a charge of infanticide, the practitioner has not only to prove that the child has lived and died but also that it has been killed.



The signs of respiration are treated in four classes: 1st, those derived from the thoracic parietes; 2dly, from the state of the lungs; 3dly, from the organs of circulation; 4thly, from the organs of digestion. The remarks upon the first of these classes present nothing which may not be found in other works. Under the second head the author describes a condition of the pulmonary substance which, with regard to its volume, might be mistaken for the development produced by respiration. He claims to himself the merit of having been the first to notice the lesion, and designates it as *adème pulmonaire* or *endurcissement lardaciforme*: the consistence, he observes, is intermediate to the induration presented by the lardaceous form of scirrhus and the ordinary ramollissement of the lungs of new-born infants. We are surprised to find M. Devergie asserting that the altered colour of the lungs induced by respiration is not imitated by artificial inflation. Orfila states that a scarlet injection may result from the latter cause;\* and the late Mr. Jennings, of Leamington, in a valuable memoir† upon Insufflation of the Lungs of Still-born Infants, testifies to the same fact in the most unequivocal terms.

The remarks upon Ploucquet's celebrated test are valuable, inasmuch as they must tend in some measure to repair the faith of the profession, which was seriously shaken by the researches of Chaussier in Paris, and of Schmidt in Vienna. It will be remembered that Ploucquet, after an examination of four subjects, arrived at the conclusion that the weight of the lungs of an infant which has never breathed is to that of the whole body as 1 : 70, while, in one which *has* respired, it is as 1 : 35; the increased weight being occasioned by the increased quantity of blood in the pulmonary parenchyma. But Chaussier and Schmidt, from a very extended series of observations, (the former having examined 400 subjects, the latter 101,) inferred that the difference is by no means so great as that which Ploucquet stated. Thus, Chaussier gives the relative weights of the lungs of the infant which has, and of that which has not respired, as about 1 : 49 in the former, and 1 : 39 in the latter. Schmidt gives the proportional numbers as 1 : 52 and 1 : 42.‡ Our author offers some good reasons for entertaining a little scepticism respecting the conclusions drawn from Chaussier's tables, many of which reasons would most probably apply to the statements of other observers. His objections are, that he has detected inaccuracies in several of the calculations; that the cases examined range from the sixth month of the fœtal life to the second year of the extra-uterine; that, in a considerable number of the subjects, the lungs were putrefied, wholly or in part, (a circumstance which could

\* *Leçons de Méd. Lég.*

† *Transactions of the Provincial Med. and Surg. Association*, vol. ii.

‡ Hartman, a Danish physician, not referred to by Devergie, states the numbers as 1 : 59 and 1 : 48. See Dr. Arrowsmith's article "Infanticide," in the *Cyclopædia of Practical Medicine*.

not fail to modify very materially the results of the investigation, since the escape of blood and other fluids in putrefaction must necessarily diminish the weight of the lungs;) that, in several instances, the lungs were diseased, and sank in water, notwithstanding they belonged to infants which had survived ten, fifteen, or twenty days; and, lastly, that, in some of the cases, the lungs were taken from monsters, in which there was a deficiency of the proper balance between the development of the lungs and that of the rest of the body. These considerations are certainly quite sufficient to impair our confidence in M. Chaussier's inferences. In order that he might arrive at more correct conclusions, M. Devergie expunged from the tables in question all the cases liable to the above objections, and selected 200 as most likely to afford him accurate data. The differences in the proportions occasioned by the period of life, both intra-uterine and extra-uterine, are very striking. At the ninth month, in the infant which has not respired, the weight of the lungs is 1-60th of that of the body; after respiration, for a period varying from a few minutes to twenty-four hours, it is 1-45th, while Ploucquet made it 1-35th. The longer the period of respiration, the greater is the difference. After three or four days, the increase of weight by respiration is nearly one-half; but there is little utility in this observation, since the crime of infanticide is seldom committed at so late a period. It is worthy of remark, and favorable to Ploucquet's test, that, upon comparing the children still-born at the ninth month with those born alive at the same period, it appears that, in only two out of thirty-three, was the proportional weight of the lung greater in the former than in the latter. Moreover, in one-third of the still-born cases at this age, the weight of the lungs was no more than 1-70th of that of the body. At the eighth month, the difference in the weight of the lungs is more decided than at the ninth: thus, in those which have respired, it is 1:37; and in those which have not, 1:63. At the seventh and sixth months, the difference is too slight to render the method of Ploucquet at all serviceable. For the accuracy of these statements we must refer the reader to the author's tables. We have said enough, however, to shew that his researches encourage us to expect, at all events, much valuable collateral evidence from the test under discussion.

M. Orfila thought it desirable, in consequence of the variable results from Ploucquet's method, to endeavour to procure some more definite conclusions from the proportion between the lungs and the heart, before and after respiration, hoping to find less variation in the weight of the heart than of the whole body; but the experiments instituted with this object in view yielded nothing satisfactory.

The remarks upon the Hydrostatic Test are full, practical, and for the most part unexceptionable. Our readers are doubtless familiar with the objection founded upon the fact, that floating of the lungs

may be caused by putrefaction, and the consequent evolution of gas; but there are several circumstances which considerably modify the application of this fact. Thus, it has been proved by repeated observations that, although putrefactive emphysema may occur in the lungs of a still-born foetus after exposure to the air, it only occurs at a very late period, since these organs are almost the last to undergo the change in question. The experiments of Orfila prove that, if the body has remained in water, many months may elapse before the lungs become putrid: he states, indeed, that the integuments of the throat must have been previously destroyed by decomposition, and the pulmonary substance exposed to actual contact with water. The practical use of the last observation is well guarded by Devergie. The subjects of Orfila's experiments were bodies which had been kept in water during his researches; but Devergie examined the bodies of two infants which had been thrown into the Seine eight or nine days previously to his inspection of them, and he found a decided gaseous putrefaction in the lungs. The apparent inconsistency of this fact with the experiments of Orfila is removed, when we learn that the bodies examined by our author had been taken out of the river between twenty and thirty hours before the chest was opened, and during that period were exposed to the atmosphere.

It has been long observed that, if the body of an adult is removed from the water after several days of immersion, at a time when the temperature of the atmosphere is above 60°, the disengagement of gas commences almost immediately, not only in the external but also in the internal organs. The quantity of gas disengaged is sometimes so considerable as to alter the position of the limbs, and even of the whole frame; so that it is the practice at the Morgue to fasten the bodies down, in order to prevent them from falling from the tables. Sometimes these movements have been such as to induce strangers to report to the keeper of the establishment that some of the corpses had given signs of life. Now, that which occurs in the body of the adult under such circumstances is occasioned with no less rapidity in the foetus, and, as it generally happens that the medico-legal inspection is not performed till several hours after the removal of the body from the water, the putrefactive emphysema will have advanced to a great extent. These facts, while they afford valuable proof of the possibility of the floating of the lungs by mere putrefaction, throw little or no difficulty in the way of the medical jurist, since he can easily distinguish this condition from that which depends upon the introduction of air into the cells. If unable to recognize the putrefactive emphysema by the presence of bullæ in the cellular tissue which separates the lobules, and by the absence of crepitation, he may resolve his doubts by observing the effects of compression, which will cause the pulmonary substance to sink immediately. To discriminate the effects of respiration from those of *insufflation* is far

less easy; for, notwithstanding the penetration of air by artificial inflation is far less complete and extensive than in the natural respiratory process, it may produce nearly all the signs of the latter, —viz. elevation of the thorax, descent of the diaphragm, augmentation of the volume of the lungs, expansion of the air-cells, and (according to Devergie and many other authorities,) floating of cut portions of the lungs, *even after forcible compression*. He says that a practised eye may, in the case of insufflation, discover a difference in the general paleness of the pulmonary tissue, and in the absence of the injected capillaries observable after respiration; but he allows that these characteristics alone are not to be relied upon. The test of Ploucquet must be resorted to; but this also will not receive our entire confidence, for reasons already adduced. Unable to get completely rid of the difficulty, our author points out the extreme improbability that insufflation should have been practised in a case of suspected infanticide; for, supposing that some malicious individual, bent upon imputing the crime to the unfortunate mother, (a case which has never occurred,) should have inflated the lungs of the still-born infant, it is necessary to suppose also that the person is possessed of some professional knowledge, particularly of the fallacy to which the hydrostatic test is subjected by the procedure in question; and that chance favoured the plotter so far that a still-born infant is brought forth, that the mother has concealed her pregnancy and delivery, and that collateral evidence bears unfavorably upon her. Even supposing all these circumstances to conspire against the victim of malice, it remains to be proved not only that there are such signs of respiration as may be imitated by artificial introduction of air, but also that there is a *corpus delicti*; that is, that there is evidence of death by unnatural causes.

The latter observation would apply with equal force to another far-fetched supposition, to wit, that the mother, influenced by strong affection, may have resorted to artificial means for animating her infant; means which are afterwards to criminate her. "In imagining such a case," says Devergie, "it is necessary to leave out of account all the collateral proofs requisite for bringing home an accusation, and to forget that a murderess would strike her victim in secrecy; while a mother, who could lavish such pains upon her infant at such a time, would act with perfect openness."

We should be guilty of a considerable omission were we to neglect, upon the present occasion, to draw the reader's attention to the experiments of the late Mr. Jennings, which have been already alluded to, and of which M. Devergie is evidently ignorant. Mr. Jennings satisfied himself, by repeated trials, that the pulmonary tissue may be made to sink after insufflation, by an extreme degree of compression; but that no degree of it can produce the same results upon lungs which have respired. His mode of operating was to knead the tissue in the palm of the hand, till it was reduced to a kind of paste.

It has been objected to the hydrostatic test, that the lungs may sink notwithstanding the child has respired, in consequence of the specific gravity having been increased by a morbid process of condensation, or by accumulation of blood in the parenchyma; but the researches of Orfila and Billard render it probable that floating may always be effected by expressing the fluids from the tissue. The volume and colour of the foetal lung, the form of the lobules, and the acute angles at the borders of the lobes, will nearly always be sufficient to distinguish it from the state of morbid condensation sometimes found in the lungs of infants born alive: or, should we remain in doubt upon this subject, the accused cannot suffer from our uncertainty unless there are proofs of a violent death, not to mention that the existence of such a disease as would cause the lungs to sink is in itself a strong presumption that the death was natural.

We must pass over the remarks upon the tests proposed respectively by Daniel and Bernt; and we regret that we have not space for the author's very excellent summary of the signs affirmative and negative of respiration.

The next question that presents itself is, how long did the infant live? The answer will in many cases be assisted by the appearances already detailed. These, however, will throw but little light upon the question whether life continued only a few seconds or was prolonged for several hours; nor can we be guided entirely by the extent over which the air-cells are expanded, since this must vary extremely in different subjects.

Upon the means of judging how long a time has elapsed since death, no very exact researches have as yet been prosecuted. Orfila, with the assistance of Gerdy and Hennelle, observed the progress of putrefaction in portions of the foetus; but this process is very different from the decomposition of an entire body, and consequently the researches of these gentlemen are of little avail, except in enabling us to form an opinion upon a case in which the body has been cut up into pieces previously to its concealment. (T. i., p. 594.)

The causes of natural death, during the course of labour or soon after birth, are treated with sufficient accuracy and minuteness, but we meet with little or nothing peculiar to the author. Under the head of death by violence, he alludes to a mode of suffocation more common in France than in this country, namely, the insertion of a plug in the air-passages. In the chapter upon Medico-legal Dissection, he describes the difference presented in the appearances according as the plug had been introduced during life or after death.

"The following," he observes, "is what I have noticed in two cases of suffocation by this method. The plugs (*tampons*) are generally made of folds of linen tightly bound together. As the cavity of the mouth and pharynx lessens towards the oesophagus, the degree of pressure occa-

sioned by the plug must be greater in the lower parts. From this inequality of pressure there results a peculiar condition of the palate and pharynx in different parts, and a difference in colour at the two extremities of the plug. The mucous membrane is thin, white, and free from injection in the lower part, where the pressure is greatest; while, in the upper and anterior part, it is red or violet-coloured, turgescient, and thickened; appearances easily explicable by the obstruction which the plug offers to the circulation in the part. The plug itself is white, and moistened at the extremity corresponding to the greatest pressure, and sometimes dry in the inner folds; while the part which was free in the mouth is stained vermilion by the bloody exudation, and moistened through its whole thickness. These appearances can only be produced in a living infant; and, if they do not afford irrefragable proof of suffocation, they at least convey a very strong presumption of criminal intention." (T. i., p. 294.)

It is obviously a matter of no slight importance to be able to determine the degree of reliance which may be placed upon marks of contusion, with reference to injuries during labour. One of the most unsettled questions upon this subject respects the evidence of strangulation by twisting of the umbilical cord round the neck. Obstetricians are well aware that this accident is by no means an infrequent cause of death, especially in cases of tedious labour. If the infant has not breathed, the enquiry into this cause of death possesses no great interest in a medico-legal point of view; but if, on the contrary, after respiration has occurred, either in the vagina or (which more frequently happens) between the expulsion of the head and that of the trunk, death is occasioned by the pressure of the cord, either in the way of apoplexy or of asphyxia, it becomes interesting to ascertain whether the body will present appearances characteristic of the cause of death; such, for instance, as will enable us to distinguish them from the effects of artificial strangulation. Authors are not as yet agreed as to whether ecchymosis is ever occasioned by the pressure of the umbilical cord. Klein disputes the probability of such a result, upon the ground that, although he has examined a considerable number of infants who came into the world with the cord twisted round the neck, he has never detected any traces of it, either in the form of actual ecchymosis or of any impression whatever. He alludes to the fact that children born with the aid of forceps or of loops applied to the limbs, are often free from the least sign of cutaneous ecchymosis; and urges how improbable it is that this lesion should be produced in the infant by the pressure of such a substance as the umbilical cord, when it is so rarely found in the bodies of adults who have died by hanging. Devergie fully coincides with Klein, both as to the non-occurrence of ecchymosis from the alleged cause in the infant, and the extreme rarity of it in cases of death by strangulation.

Upon the latter point we shall have more to say presently. In

the mean time we may observe, that our author appears to be ignorant of some well-attested cases related by German physicians, in which the necks of infants strangled by the cord bore evident marks of the impression. M. Tauffiel has published a collection of these cases in the *Annales d'Hygiène*, for October, 1835; most probably after our author's remarks had gone to the press. We think it right to say, that M. Devergie uses the term *ecchymosis* in its most rigorous sense, and that, in the cases in question, he might fairly deny its existence, notwithstanding there were other indications of compression of this part; such as a red, or brownish discoloration of the skin within the furrow. The cases, however, are quite at variance with Klein's assertion respecting the absence of any impression whatever. There is considerable foundation for our author's scepticism as to the possibility of mistaking the impression left by the neck of the uterus for the effect of a noose. Upon this point M. Velpeau observes, that in the supposed case the head of the infant must be either within the vagina, under which circumstances the neck of the uterus cannot operate upon the neck of the child; or the head must have passed the *os externum*, and then the cervix is too far back, and too much distended by the shoulders, to exert any pressure upon the neck of the infant. But, though the cervix may be otherwise engaged, we are far from feeling convinced that the *os uteri* may not press the neck, and that very tightly, after the birth of the head; whether with sufficient force to leave a circular impression, is far more questionable.

Devergie closes the consideration of this subject by reciting a case which was published in the Thirteenth Vol. of the *Annales d'Hygiène*, by M. Marc, who was engaged in the investigation. Though it is impossible for us to go into the details, we may be able to give such an outline as will exhibit the principal difficulties of the case.

The body examined was that of an infant at full term. The cord had been cut within two lines of the navel; the neck presented a circular furrow, a line and a half in breadth, in which there were two red bands, extending from before backwards in a horizontal direction to the nucha, where they were interrupted by portions of skin of a natural colour; the distance between the two streaks was half a line, and in this interval there was no discoloration. On each side of the neck there were irregular *ecchymoses* crossing the furrow; the nucha presented a longitudinal impression of deeper colour, four lines in length, and one quarter in breadth; the skin was frayed in this part, and there was extravasation in the subcutaneous cellular membrane. There were *ecchymoses* of the scalp, fractures of the parietal and occipital bones, and extravasations of blood in the convolutions of the brain. The lungs presented unequivocal signs of respiration. Upon these and other facts, M. Marc and his associates reported that it was difficult to assign the death of the infant to strangulation by the cord, because the furrow did not correspond to

the ordinary volume of the cord, and because the red bands were separated by an interval of skin perfectly pale; and, upon the supposition that there had been two turns of the cord, the narrowness of the interval would not admit of explanation. The fact of respiration on the one hand, and on the other the absence of any sign of asphyxia, were inconsistent with this kind of death. The injuries of the head were amply sufficient to account for death; but how had they been produced? The mother declared that she was delivered while standing, that her infant dropped upon the floor, that she took it up, but that she fainted, and that it then fell from her arms. The woman was of low stature, and the distance between the os externum and the ground was too short for the first fall of the infant to have produced the lesions in the head; but they were more likely to have been caused by the fall from the arms. Such was the substance of the first report. A subsequent report stated that an examination of the pelvis of the mother had proved it to be large, and that the funis attached to the placenta was thirty-two inches in length; circumstances which explained both the sudden expulsion of the child, and its falling to the ground without any check. The extract from the requisition to the *procureur du roi* stated that the mother was delivered when alone in her chamber, that her child fell upon the ground, and cried; that she took it up, and opened the door to ask her younger sister for a pair of scissors; that, having obtained them, she closed the door, went to her bed, and then lost her consciousness, at which time her infant must have fallen a second time; and that, when she recovered her senses, she cut the funis, and placed the child upon the bed, but it was no longer living.

M. Marc characterizes this case as one of a most obscure description. He thinks it possible that the funis may have twice encircled the neck, though the furrow did not correspond to the ordinary size of the cord. Strangely enough, he omits to mention what was the circumference of the cord in this particular case. Strangulation, however, he considers to have been quite out of the question; and he attributes the death to the injuries of the head, the severity of which he explains by supposing that the mother might have thrown her infant down in the convulsive motions of syncope. With reference to the section of the cord being so near the umbilicus, he only observes that there were no indications of umbilical hemorrhage.

Devergie criticises the conclusions of the reporters, and expresses his own opinion in favour of the charge of infanticide: 1st, because the funis could not possibly have produced the fraying (*éraillage*) of the epidermis, the ecchymosis of the skin and cellular membrane, and so narrow an impression; and, 2dly, because the alleged fall of the infant from the horizontal position in the arms of the mother would not account for so severe an injury of the bones of the cranium. With respect to the suggestion that the child might have



been jerked from the arms in the convulsive movements of the mother, he thinks it far more probable that the child should have fallen during that muscular relaxation which accompanies the first stage of syncope; but, even if convulsions had come on at once, what kind of convulsion, he asks, would make the arms act in such concert as to perform those movements of flexion and extension requisite for projecting such a body as an infant, and in such a manner that the head should fall perpendicularly upon the ground? These strictures are, we think, not hypercritical. The author might have pointed out the improbability that the extravasation upon the sides of the neck should have been occasioned by the funis. We regret that the circumference of the cord was not stated, because we have met with cases in which this appendage was sufficiently small to have left a furrow no broader than that described in the report; but, after weighing in our minds all the facts detailed in the documents referred to, we feel inclined to suspect that attempts were made to strangle the infant by some slight band (a string or ribbon for instance,) but that its destruction was completed by blows upon the head.

Interesting and important as are all the enquiries connected with Infanticide, we must leave many of them untouched. It appeared to us that a better idea of the author's capabilities and resources would be conveyed to the reader by following him pretty closely through one or two discussions, than by giving a hasty digest of so large a number of topics as must necessarily be treated in a systematic work upon Forensic Medicine.

We shall conclude our notice of M. Devergie with some remarks upon Death by Hanging; not that this subject immediately follows Infanticide in his work, but that some of the enquiries comprised in it are intimately connected with the question which has just engaged our attention. He does not trouble himself to present an historical survey of the various opinions which have been promulgated respecting the cause of death in cases of suspension. Persons moderately familiar with the literature of juridical medicine must be well aware that great authorities may be quoted respectively in favour of the doctrines which assign the death either to apoplexy or to asphyxia. There can be little doubt that the diversity of opinion among authors has arisen from the different nature of the cases which fell under their observation. The recent investigations of some German practitioners have, in our opinion, rendered it highly probable that the mode in which the noose was applied materially influences the production of the one state or the other. Professor Remer, of Breslau, (whose researches will be found in the Fourth Vol. of the *Annales d'Hygiène*.) collected 102 cases, nine of which presented signs of pure apoplexy, six of pure asphyxia, sixty-eight of the operation of both these causes, some of them shewing an equality of operation, others a predominance either of apoplexy or of asphyxia; in nineteen, the proximate cause of death was not

ascertained. Dr. Fleischmann\* asserts that, when the cord takes a horizontal direction, comprehending the larynx or passing immediately below it, or even when it passes between the os hyoides and the chin, and yet in its course to the nucha escapes the mastoid process, there will be discovered signs of apoplexy, or of the combined effects of apoplexy and asphyxia. But if, on the contrary, the cord, being situated between the thyroid cartilage and the os hyoides, or even in front of the latter, passes over the angles of the lower jaw and the mastoid processes, there will not be found any marks of apoplexy. The cause of the difference in these cases is that, in the former, the large vessels of the neck are compressed, but not in the latter, since the cord, though pressing upon the aperture of the windpipe, is prevented from interfering with the return of the blood from the head, by the angles of the jaw, and by the mastoid processes. In some few cases, however, notwithstanding the cord passes below the larynx and encircles the neck, there are no marks of apoplexy. Fleischmann imagines that, in such cases, death is hastened by some injury of the nerves of the neck. They correspond to those which Remer attributes to nervous apoplexy.

The author devotes a proper share of his attention to the necroscopic signs of death by strangulation. He offers some rational doubts respecting the common statement, that the position of the tongue relatively to the teeth depends upon the situation of the cord. His reasons are as follows:

1stly. I have found the tongue projected in a body which bore unequivocal signs of death by drowning, and upon which there was no impression of a cord. 2dly. I have met with two cases in which the tongue was projected, notwithstanding the cord was applied above the os hyoides. 3dly. I have produced the same effect in the dead body by fixing the cord in this situation."

Fleischmann avers that the position of the tongue is affected by the kind of death: thus, if the death was slow and distressing, the tongue will be found protruded. Devergie has met with great variations of the sign, and is disposed to consider it as dependent rather upon nervous than upon mechanical agency. (T. ii. p. 385.)

The appearance of the neck is far more deserving of attention than that of the tongue. Before considering Devergie's remarks upon this subject, we may as well state that a good deal of confusion prevails in medico-legal works as to the use of the term *ecchymosis*, particularly in connexion with the mark left by the cord upon the neck. As used by some writers, this word signifies the peculiar condition of the skin within the furrow; by others, the extravasation in the subcutaneous cellular membrane; and by others, again, the discoloration of the lips of the furrow. It

\* See *Annales d'Hygiène*, t. viii. p. 424.

is only by remembering these differences of signification that we can account for the fact that Remer declares that nine-tenths of his cases presented ecchymosis; while Klein relates fifteen cases, and Esquirol twelve, in none of which was this lesion discovered. Devergie found it wanting in twenty-five cases, and Fleischmann in five out of six. But authors are well agreed that a peculiar discoloration of the skin under the cord, a brownish yellow not unlike the appearance of parchment, or of a blistered surface after death, is nearly always found; and we have little doubt that this condition has often passed with superficial observers for the dirty yellow colour which is left by an ecchymosis. A degree of pressure inadequate to the production of ecchymosis is quite sufficient to occasion the appearance alluded to. It was found in nearly the whole of that curious collection of cases which M. Marc appended to his medico-legal discourse upon the death of the Prince de Condé. In these cases the noose was tightened partly by voluntary efforts, and partly by the weight of the body, but without the additional force produced by a fall, as the lower extremities were in all the cases within reach of the ground. The instruments made use of were such articles as handkerchiefs, twisted shirts, &c. It is to be wished that we could admit M. Marc's statement that the parchment-like change in the neck cannot be effected after death; but M. Devergie has demonstrated by experimental researches that it may be cadaveric, and consequently that its value as a sign, when taken singly, is inconsiderable. The production of this state of the skin Devergie limits to two circumstances: 1st, when the cord has been applied with violence; 2dly, when it has been removed soon after death, and the skin has been exposed to the atmosphere, or even when the cord has remained in contact with the skin, provided several days have elapsed. He regards the alteration as the result of a purely physical process of desiccation; the fluids being driven out by pressure, the laminæ of the dermis being brought closer together, and rapid evaporation of the remaining moisture being favoured by exposure. In this process, the lips of the furrow often assume a violet colour, in consequence of the blood being driven into them from the part under pressure; an appearance which Esquirol and Devergie have produced in the dead body.

We do not consider exposure to the air so necessary to the desiccation as the author would intimate; for we have found the skin in a semicorneous state even an hour after death, and when the cord had not been removed. Is it possible that the heat produced by the friction may have assisted the process? The violet colour of the lips of the furrow may result from pressure after death, but this must have been exerted within a very few hours, and even then it will rarely be observed upon the lower border. Esquirol was the first to take notice of a bright silvery line in the subcutaneous cellular membrane of the furrow. It is a purely mechanical change,

resulting from the condensation of this tissue, and will present a more or less glistening appearance according to the quantity of fluid contained in the part.

The most unequivocal signs of suspension during life are, extravasation in the cellular membrane and in the muscles, lacerations of these parts, fractures of the os hyoides and laryngeal cartilages, and rupture of the vertebral ligaments; but it is necessary that these several solutions of continuity should be accompanied by true ecchymosis. M. Amussat first noticed the curious fact, that the inner and middle coats of the common carotids may be divided by a cord applied during life. Devergie has met with one case confirmatory of this observation; and, by several experiments, he has proved that the injury cannot be imitated in the dead body. If to the above signs be added the traces of emissio seminis, and of urinary discharge, we have enumerated all the indications that can be relied upon with certainty in proof of strangulation during life; but they may all be absent, notwithstanding the individual died from this cause. It is highly improbable, however, that they should be wanting when the individual has been strangled by violence. We are somewhat surprised at the following observations of the author.

"All the cases in which the signs are least decided belong to suicide, and in these the moral proofs are often so convincing that an autopsy is a work of supererogation. Moreover, magistrates never give orders for it. During the seven years that I have been attached to the Morgue, where there are annually deposited twenty bodies killed by hanging, there has not been, to my knowledge, a single case of medico-legal dissection. The reason is simple: a murderer would rarely be disposed to sacrifice his victim by a method so difficult of achievement."

It seems to us that if the signs are so likely to be wanting in cases of suicide, this circumstance might be taken advantage of by the murderer who has despatched his victim by other means, and wishes to make it appear that the latter had himself put an end to his existence. It is scarcely a far-fetched conception to imagine that a person might poison another by a strong dose of prussic acid, administered perhaps during sleep, and suspend the body immediately afterwards. In such a case, if there were any moral presumptions of a suicidal tendency on the part of the deceased, it would be difficult to come at the truth: at all events, an examination after death would be any thing but "*un surcroit d'investigation*."

We now take our leave of M. Devergie; but with the intention of resuming the survey of his work at a future opportunity; probably when it is quite completed. He has yet to grapple with two great subjects, Insanity and Toxicology, besides others of minor interest. Should he prove as successful in the management of these topics as of those which have already engaged his pen, we shall have but little hesitation in pronouncing his treatise to be the best guide to the student of forensic medicine that the French language, rich as it is in works of this description, can afford. Not that

in execution it is superior or even equal to the writings of Mahon, Fodéré, and Orfila, but that the information which it contains is derived from the most recent as well as the best established discoveries in medical science.

Our attention must now be directed to Mr. TAYLOR's *Elements*. The credit of our national literature required the appearance of a publication comprising the later improvements, which have been very numerous and important since the issue of the respective works of Drs. Male, Smith, and Paris. To Dr. Beck's admirable treatise, a new edition of which has recently been published, with an abundance of fresh matter, worthy of the stock to which it has been added, our literature can lay no claim; though Englishmen must feel proud that such a work should have been written in their language. Mr. Taylor's treatise, as we have already remarked, has the merit of presenting a fair view of the present state of the science. We cannot say that the author has brought forward many researches peculiar to himself, but he has compiled well; by which we imply, that his matter is sound, ample, well arranged, and, above all, adapted to practical purposes.

We think that here and there he has somewhat neglected to enrich his illustrations with gleanings from foreign fields, but the occasions are rare in which anything is omitted that would tend materially to the guidance of the medical jurist in difficult questions.

Before proceeding to select one or two subjects for comment, we must beg leave to express our regret that Mr. Taylor should have assisted, by the title of his book, in keeping up the use of the term *Medical Jurisprudence*. If there were no other designation for the science, it might perhaps admit of question whether a new one should be created, as no kind of plurality is more objectionable than that of names: but, when a more correct and appropriate term is in common use, we are surprised that a teacher of the science should not adopt it. If *Forensic Medicine* is a fitting designation of the science to which it is applied, (which we never found any one inclined to dispute,) it is obvious that medical jurisprudence cannot also be proper. The latter signifies the knowledge of law as applicable to medicine, which, as an art or application of science, may be affected by law, as in medical police, and likewise as a *profession*, but not as a science, unless the laws of nature are amenable to human regulations. *Forensic medicine* signifies that department of medicine, considered either as a science or an art, which is applicable to law, whether legislative or administrative. If we have correctly defined the respective meanings of these terms, there cannot be a moment's question as to which ought to be employed by medico-legal writers.

Although conciseness is one of the characteristics of the work, viewed as a whole, the first chapter, which treats of *Asphyxia*, is certainly unnecessarily prolix. In a purely physiological work,

some extent of speculation is allowable, even upon a subject which is still in need of demonstrative evidence; but, in a treatise from which we hope to derive helps to practice, hypothetical excursions are impertinent. After a few preliminary observations upon the external causes and the phenomena of asphyxia, the author enters upon two principal inquiries: "1st. The nature of the change which the blood circulated in asphyxia is stated to undergo; 2d, the probable influence of this fluid upon the organs of the body."

He admits that the arrest of the circulation takes place in the capillaries of the lungs; a point which our readers are doubtless aware Dr. Williams and Dr. Kay have established by experiments. He takes great pains to prove the incorrectness of Dr. Kay's views relative to the mode in which the pulmonary obstruction is effected. Dr. Kay assumes that the capillaries of the pulmonary veins are endowed with a peculiar organic sensibility, which indisposes them to admit unarterialized blood. The circulation of dark blood after the commencement of asphyxia he considers not irreconcilable with this view, because there remains in the lungs a certain quantity of oxygen after the stoppage of the respiratory action, which serves for a short time to arterialize the blood, though imperfectly; and he therefore thinks that the dark blood is not actually venous, but only imperfectly oxygenized. After a certain period, generally about three minutes, blood ceases to flow from the pulmonary veins, and the action of the heart is arrested, not because this organ has lost its contractile power, but because the blood is not delivered to the left side in sufficient quantity to maintain its contractions. Mr. Taylor will not allow the venous radicles in the lungs to possess any such sensibility as Dr. Kay supposes. This he is quite at liberty to doubt, since it must necessarily be a matter of pure conjecture; but, when he expresses an opinion that there is no proof of any difficulty to the transmission of venous blood, *quâ* venous, through the pulmonary capillaries, (setting aside the *cause* of the difficulty,) we think him decidedly in error. He alludes triumphantly to the results of some other experiments of Dr. Kay himself, in which venous blood, when injected into an artery, was found to maintain the contractility of muscles, and urges that, if it circulated through the capillaries of these parts, there is no reason for presuming the existence of any difficulty in the lungs. We are surprised that he should not have considered the probability that the pulmonary capillaries would be particularly guarded, in some way or other, against the entrance of venous blood; since, if this could take place with facility, the tissues would often, from a variety of causes, incur the risk of receiving but an indifferent supply of oxygenized blood. He imagines that the dark blood, which is circulated after the stoppage of the respiration, has not been at all acted upon by oxygen; for he is unwilling to allow that what gas may remain in the lungs produces the effect ascribed to it by Dr. Kay; for which denial he gives no other

reason than that it has not been proved experimentally that the air found in the lungs of asphyxiated animals is deprived of all its oxygen. The fact is, the author has an hypothesis of his own, which he thinks a much better explanation of the matter. The blood, he says, appears to be gradually vitiated, not because it undergoes alteration as long as oxygen continues in the lungs, but because the venous blood is mixed with the red blood circulating in the arteries at the commencement of asphyxia. Now, to our apprehension, this mixture is not only not proved, but is even inconceivable, except in the cavities of the heart itself. In the vessels where Mr. Taylor imagines the process to occur, we consider it physically impossible; for, supposing red blood were in the aorta at the time that black blood issues from the left ventricle, it is obvious that, in the continuous stream of the circulation, the red blood will not wait to be tintured by the black, but that the one will follow the other. But let us concede for a moment to the author that the obstruction in the lungs is not caused by the quality of the blood, in order that we may learn what he considers to be the impeding agents. These, after a few remarks upon the physiology of the pulmonary circulation during respiration, he concludes to be the collapsed state of the lungs and the enfeebled action of the right ventricle, and possibly a change in the innervation of the capillaries of the lungs by sympathy with the brain. We shall not stop to combat this revived error of Haller's respecting the supposed mechanical impediment to the pulmonary circulation, as we think that the arguments and experiments of Goodwin have completely set that question at rest. "Besides," as Dr. Alison remarks, "we know that the same stagnation in the lungs takes place in the case of an animal confined in a gas which does not contain free oxygen, as in the case of drowning or strangulation, although, in the former case, any impediment to the mechanical acts of respiration that can occur must be the consequence, not the cause, of the fatal changes within the chest."

The heart may be enfeebled, for aught we can tell to the contrary; but if its defective contraction were the cause of the accumulation in the lungs, how are we to explain the reviving influence of readmitted oxygen? If the heart has ceased to beat because its power of contracting is lost, and the pulmonary arteries are gorged because the right ventricle has failed to propel the blood through them, the contact of air with the blood would be incapable of restoring the circulation, because it could have no effect upon the heart. We really think that physiologists have given themselves some unnecessary trouble upon the subject. If they had simply observed that stagnation, more or less complete, in the pulmonary capillaries, takes place upon the interception, and is removed upon the readmission of air, and upon the consequent alteration of the blood, it would have been an all but necessary inference that the want of this change had caused the stagnation. That this is the case we have long be-

lieved, but our conviction has been materially strengthened by some extremely ingenious observations communicated by Dr. Alison to the British Association, and since embodied in his article on *Asphyxia* in the Cyclopædia of Anatomy; a dissertation which, we imagine, Mr. Taylor cannot have met with, or he would scarcely have omitted to notice it, even if it had not tended considerably to alter his views upon the subject of asphyxia.

We shall not follow the author in his prosecution of the inquiry whether venous blood extinguishes the contractility of muscle and the function of the brain. It can require no proof that the unarterialized blood which he believes to circulate, or the imperfectly arterialized fluid of Dr. Kay, must be unfitted for the function of any part; or why should respiration be necessary? But before the cerebral derangement can materially influence the circulation, this function has been stopped by the cause above mentioned. The cessation of the animal functions is perhaps due in some measure to the vitiated blood; but it seems quite as probable that the impeded circulation in the lungs, which must operate by the obstacle presented to the return of the blood from the brain, may have something to do with the result.

In the second chapter we have a sufficient account of the Signs of Real and Apparent Death, a subject upon which many medico-legal writers have been needlessly liberal of their instructions. We must observe, however, that Mr. Taylor has omitted, in his remarks upon Rigidity, to take notice of that kind of stiffness which sometimes remains after death by diseases of the nervous system and by asphyxia, and which it is highly important to distinguish from true cadaveric rigidity. It is well known that the latter appears very late in cases of asphyxia; on which account Orfila reasonably infers that, if the limbs are found stiff while the animal heat remains but little impaired, in a person who has died asphyxiated, the death must have been very recent; the rigidity being spasmodic, not cadaveric. (*Lec. de Méd. Lég.*, II., 195.) The importance of bearing this distinction in mind will be obvious to any one who has read M. Marc's medico-legal discussion of the case of Jean Courbon (*Ann. d'Hyg.* vii., 604;) and Dr. Fletcher's very interesting account of the trial of Robert Reid for murder of his wife. Mr. Taylor refers his readers for the original of the *facies Hippocratica*, to the fifth section of the second Book de Morbis. This reference is also given by nearly all the French writers, who appear to have borrowed it from one another. Indications of death from the countenance are scattered here and there through the treatise, but in no part of it is there such a summary as they have given, nor any thing like it. The nearest approach to the description will be found in the first part of the "*Prænotiones*," but even there the signs are not grouped into such a portrait as Mr. Taylor and his predecessors have depicted.

Death by Drowning is very ably treated of in the third chapter.



The author has selected several interesting illustrations from trials which have occurred in our own courts within the last few years, of some of the more embarrassing questions connected with this subject. The following account of some experiments performed by himself to determine under what circumstances water is most likely to be found in the stomach of a drowned person are worthy of attention.

"We allow, then, that water may enter into the stomach of a drowning animal, but in variable quantity; and we must, at the same time, admit that there are cases of drowning in which water is not discovered in the organ. In dissecting cats which had been drowned, I have repeatedly remarked the absence of water from the stomach: in these cases, the animals had been invariably kept under water from the first moment of their submersion, and thus in a condition but little favorable to the exercise of deglutition. Water does not readily penetrate into the stomach of a subject which has been thrown in after death, the parietes of the œsophagus applying themselves too closely to each other to allow of the passage of the fluid. If putrefaction has advanced to any extent, it is possible that water may enter: but the practitioner will easily judge from the state of the body how far this process may have been concerned in the admission of the fluid into the stomach and alimentary canal. It is, however, necessary for the Medical jurist to know that there are cases in which water may be found in the stomachs of persons apparently drowned and yet it will afford no evidence of death having been caused by drowning. Thus, if a body be sunk to a very great depth in water, this fluid will find its way into the stomach and alimentary canal by virtue of its columnar pressure. In order to ascertain how far columnar pressure would influence the quantity of water contained within the stomach of a drowned animal, I performed the following experiments: Three cats, of nearly equal size, were taken: No. 1 was rapidly lowered to the depth of fifty-five feet in the Thames; No. 2 was lowered to the depth of two feet below the surface of the water, being forcibly maintained in that position; whilst No. 3 was drowned on the surface, but was allowed to sink and rise to respire frequently before death. The three cats were removed from the water after the lapse of a quarter of an hour, and, on examination, it was discovered that the stomach of No. 1 was completely distended with water; that little or no water was contained in that of No. 2; but that the stomach of No. 3 was filled, although not to so great an extent as that of No. 1. By comparing the results obtained in the first two cases, we must be allowed to infer that the depth to which an animal sinks in drowning may affect materially the quantity of water found within its stomach. The influence of this columnar pressure may be conceived to act on the body, whether it be submerged living or dead; and, therefore, it will be proper that the witness should take this into consideration before he positively decides from the discovery of water in this organ that death has taken place by drowning." (P. 120-121.)

We are surprised that, when speaking of putrefaction in water, Mr. Taylor should have taken no notice of the labours of Devergie. It is very possible that this part of the volume was written before the publication of the work reviewed in the present article; but the

researches alluded to have long been presented to the profession, and been the subject of controversy in the French journals.

The chapter on Hanging, Strangulation, and Suffocation, may upon the whole be safely trusted to as a digest of the best information upon these subjects. We think, however, that the researches of Remer, and those of Fleischmann, ought to have been mentioned and commented upon. When treating of suicidal strangling, the author might have collected more instances than he has done in proof of the possibility of the occurrence, which has often been disputed.

The fifth chapter is devoted to Lightning, Cold, Starvation, and Fire, and contains some very valuable matter. But, by far the most important part of the volume is that which treats of *Wounds*, and which occupies the last four chapters. Mr. T. has shewn great judgment in assigning so large a space to this subject. "Trials for murder and manslaughter by wounding," as he remarks in his preface, "are very frequent in our courts of law; and I flatter myself that the copious selection of modern cases which are dispersed through the concluding chapters of the volume will point out to the practitioner those questions which he is most commonly required to answer, and for the elucidation of which medical evidence is indispensable." We cannot praise too highly the great pains and earnestness with which the author directs the attention of practitioners to the great variety of questions that are involved in some of the most common casualties. In every part of the discussion he manifests a thorough practical acquaintance with his subject, and we regret that our space obliges us to speak of his labours in general terms only. Whether in distinguishing injuries of the living body from cadaveric lesions, or in deciding upon the medico-legal character of wounds by the consideration of circumstances that may have occurred prior or subsequently to the wound, or of the nature of the wound itself, or of the part in which it occurs, he is equally correct in his statements, happy in his illustrations, and prudent in his admonitions. We must find room for an account of some experiments intended to elucidate a very important question.

"The following experiments to determine the characters of an incised wound inflicted *after death*, were undertaken by a friend and myself in the summer of 1832. Opportunities but rarely present themselves where such inquiries can be pursued upon the human body so soon after dissolution as the nature of the investigation requires. In consequence of this obstacle, we selected some limbs immediately after amputation, and the results obtained by experimenting on these limbs will, I think, suffice to give us an idea of those which would follow similar experiments performed on the recently dead subject.

"In the first, an incised wound, about three inches in length, was made in the upper part of the calf of the leg *two minutes* after its separation from the body, by which the *gastrocnemii* muscles and the fascia covering the deep-seated layer of the leg were divided. At the moment that the wound was made, the skin retracted considerably, causing a protrusion

of the adipose substance beneath, the quantity of blood which escaped was small, the cellular membrane by its sudden protrusion forwards seeming mechanically to prevent its exit. The wound was examined after the lapse of twenty-four hours:—the edges were red, bloody, and everted, the skin was not in the least degree tumefied, but merely somewhat flaccid. On separating the edges, a small quantity of fluid blood escaped, but no coagula were seen adhering to the muscles. At the bottom of the wound, however, and in close contact with the fascia, we found a small quantity of coagulated blood; but the coagula were so loose as readily to break down under the finger.

“In the second experiment, an incision of similar extent was made on the outer side of the leg, penetrating through the peronei and into the flexor longus pollicis of the deep-seated layer of muscles, *ten minutes* after the separation of the member from the body. In this case, the skin appeared to have lost its elasticity; for the edges of the wound became but very slightly everted; scarcely any blood escaped from it. On examining the leg twenty-four hours afterwards, the edges of the incision were pale and perfectly collapsed, presenting none of the characters of a wound inflicted during life. Still, at the bottom of the wound, and enclosed by the divided muscular fibres, we met with some coagula of blood; but these were certainly fewer than in the former experiment. A portion of liquid blood had evidently escaped, owing to the leg having been moved.

“Other experiments were performed at a still later period after the removal of the limbs; and it was found that, in proportion to the length of time suffered to elapse before the production of the wound, so were the appearances less distinctly marked; that is to say, the less likely were they to be confounded with similar injuries inflicted upon the living body. When the incised wound was not made until *two or three hours* after the removal of the limb, although a small quantity of liquid blood was effused, no coagula were found. The edges of an incised wound made twenty-four hours after death will be found yielding, inelastic, in close approximation, and, as far as our observations extend, free from any coagula of blood.” (P. 275.)

We do not apologize to Mr. Taylor for having devoted a smaller space to his treatise than to the work of M. Devergie, because he will at once perceive that the latter is far less likely than his own to fall into the hands of English readers. We conclude, however, with a remark somewhat similar to that which terminated our examination of Devergie's treatise; namely, that, if some of the remaining subjects, such as Infanticide, Insanity, and Poisoning, should be treated with the same care and ability in the second volume as the author has already manifested, we shall have no difficulty in pronouncing Mr. Taylor's “Elements” to be, with one exception in favour of Beck's treatise, the most useful compendium of medico-legal science to which the English practitioner or student can have recourse.

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## ART. VI.

1. *Nouvelles Recherches sur la Structure de la Peau.* Par M. G. BRESCHET et M. ROUSSEL DE VAUZÈME.—Paris, 1835. Pp. 121.  
*New Enquiries on the Structure of the Skin.* By M. G. BRESCHET and M. ROUSSEL DE VAUZÈME.
2. *Vergleichende Untersuchungen über die Haut des Menschen und des Haus-Säugethiere, besonders in Beziehung auf die Absonderungsorgane des Haut-Talgcs und des Schweisses.* Von GURLT.—Berlin, (Müller's Archiv.) 1835. .  
*On the Comparative Anatomy of the Skin of Man and the Domestic Mammalia, more particularly as it regards the Organs of the Oleaginous Secretion and of the Perspiration.* By Professor GURLT.
3. *Ueber die menschliche Epidermis.* Von Dr. ALPHONS WENDT.—Berlin, (Müller's Archiv.) 1834.  
*On the Human Epidermis.* By Dr. ALPHONS WENDT.

Few organs have afforded a wider field for the range of anatomical fancy than the external integument. The differences of opinion which have existed respecting its structure may be ascribed (in addition to the difficulties attending on all microscopic investigations,) to the want of acquaintance of anatomists with facts previously recorded; to conclusions drawn from false physiological analogies; to hasty inferences from imperfect observations; and perhaps, above all, to the manner in which the skin has been hitherto examined.

Had the works of Malpighi, to which we are indebted for the first minute analysis of the texture of the skin, together with those of Ruysch, Albinus, Kaaui, Sacretaire, Winslow, and others, met with the attention which they deserve, many supposed discoveries would have been found to be recorded facts, and many of the errors and misrepresentations which characterize the works of later anatomists would have been avoided. The results of the enquiries of the French and German authors before us tend in some particulars to reconcile the diversities of opinion which have hitherto existed, although in others it appears probable that they have but added to the list, without approaching nearer to the truth.

The French authors have entered largely into the history of their subject, but without giving a due share of their attention to facts recorded by the older anatomists; and they have consequently claimed the merit of discovery to an extent beyond that which they deserve. A brief allusion to the opinions which have been entertained on the subject of the structure, origin, and functions of the constituent parts of the skin, may not inappropriately precede the consideration of the works before us.

The epidermis (meaning by the term to include the whole of that structure which is situated external to the dermis, and its papillary eminences,) has by some anatomists been described as scaly, by others as composed of layers placed over one another; opinions have

varied as to the number of these layers. It has been maintained by some that the cuticle and rete mucosum are distinct membranes, whilst others have asserted that the difference consists only in the greater density of the former. At one time the epidermis has been considered as vital and organized; at another, as destitute of any of the characteristics of living matter. Its porosity has been regarded as certain by one class of anatomists, (who do not, however, agree as to the character and disposition of the pores;) by another, this has been denied, and particularly in later times, since the property of imbibition has been ascertained to belong not only to living, but also to dead membranes. It has even been maintained that, so destitute is it of pores, that its outer layer is continued over the entire surface of the hair. The appearance which the late Mr. Chevalier described by the term "velamina;" and that of certain bodies existing within the epidermis, to which he gave the name of "inter-epidermal glands," were probably the consequence of mistaken notions respecting the functions of the skin, as well as of the mode in which his investigations were conducted.

The origin of the epidermis has given rise to a variety of opinions. Thus, it has been considered as an efflorescence of the papillæ or dermis; as an effect of the compression of the air; as a union of the exhalent vessels; as an agglomeration of the globules of the blood, deprived of their fibrin and dried; as a result of the oxidation of the rete mucosum; and some of those who have maintained its distinction into cuticle and rete mucosum regarded these, together with the dermis, as an expansion and greater development of the meninges of the brain, conveyed thither as coverings of the nerves.

Its colour has likewise been variously stated, as well as the causes to which this was to be attributed. Among those who have considered the rete mucosum as a distinct membrane, its nature has been variously described. Thus it has been termed a fine cellular membrane; a plexus of veins, arteries, and lymphatics; a vascular mucous network; a compound of several layers, and a tissue of the same nature as the grey substance of the brain. The existence of absorbents in the epidermis has always been hypothetical; the filaments seen on separating it from the dermis having by some been imagined to perform this office, whilst others have ascribed to them nervous or exhalent functions, or simply that of connecting the epidermis with the parts on which it rests. The greatest uncertainty has always prevailed as to the organs appropriated to both the insensible perspiration and sweat, and it has been a question whether these were to be considered as distinct functions or as consisting only in difference of degree. The functions of absorption, secretion, and of perspiration; the property of erectile tissues, have all been ascribed to the papillæ; but the opinion of their discoverer, Malpighi, as well as that more generally entertained, has been that they are chiefly the organs of sensation. More recently they have been considered, in other animals, as aborted hairs.

The dermis has been described as an inextricable tissue. Its vascularity, porosity, and the course of its nerves towards the papillæ have been long known; but, beyond the very evident characteristics of its structure, little until the present time has been ascertained. The structure of the sebaceous glands and hair follicles, has generally been regarded as that of a simple sack, and the existence of the former independently of the latter has been denied.

The researches of the present authors may be considered as having decided some of these doubtful points; and it is satisfactory that, with regard to the existence and characteristics of certain organs, their investigations have led to corresponding results, although their opinions differ in several important particulars.

The attention of MM. Breschet and Roussel de Vauzème has been directed to the structure of the dermis; to the organs of sensation, perspiration, and absorption; to the sources whence the epidermis is derived, and to its structure and the cause of its various colours. M. Gurlt has described with greater minuteness the structure of the perspiratory apparatus; has examined the skin, with a view to confirm or disprove the opinions of the French authors with respect to the existence of organs appropriated exclusively to the formation of the epidermis and its colouring matter; and has described the sebaceous glands and follicles of the hair. The paper of M. Wendt contains some additional observations on the sudorific organs, and on the origin and structure of the hair.

In our examination of the works before us, we shall follow the arrangement adopted by MM. Breschet and Roussel de Vauzème.

The following is their division of the various parts constituting the skin.\*

- i. Dermis (Pl. I. Fig. 4, *a*; Pl. II. Fig. 1, *a*.)
- ii. Papillæ (Pl. I. Fig. 3, *a*; Pl. II. Fig. 1, *e*.)
- iii. Sudorific organs (Pl. I. Fig. 4, *b, c*; Pl. II. Fig. 1, *f, g*.)
- iv. Inhalent organs (Pl. I. Fig. 8, 9, 10; Pl. II. Fig. 1, *h*.)
- v. Mucific apparatus (Pl. I. Fig. 11, *a, b, c*; Fig. 13, *e, g*; Pl. II. Fig. 1, *j*.)
- vi. Cororific apparatus (Pl. I. Fig. 13, *a*; Pl. II. Fig. 1, *i*.)

The secretion of the last two constitutes the epidermis; consisting of the pretended rete mucosum of Malpighi and the cuticle.

We shall employ the term epidermis, (instead of horny tissue, horny matter, epidermic layers, which are used synonymously by the French authors,) to signify every part which is situated above the epidermis and papillæ, exclusive of the various organs which it contains. The word cuticle is only applied to the external layer of the epidermis. The skin of the heel is recommended as the most favorable for examination.

CHAPTER I. *The Dermis.* For the inspection of its minute structure, a portion should be selected which is either injected by

\* All the references are to the Plates in the present Number, which are accurate copies from the originals of Breschet and Gurlt.—Ems.

blood or artificially; for, when the dermis is white, it is impossible to distinguish the vascular and other tissues. As thin a slice as possible should then be cut off with a very sharp knife, parallel to or at right angles with its furrows. This is then to be placed on a piece of glass, in the form of a lens, and illuminated with reflected light. This process is sufficient for the examination of all the structures of the skin; but it requires some precautions. The dermis must be somewhat dried in the air; for, if soft, it cannot be cut in such a manner as to allow its parts to be distinguished. From the dermis thus prepared, the secreting organs and nerves may be isolated by means of sharp curved needles. It is a dense fibrous envelope of the capillary bloodvessels, lymphatics, nervous filaments, and parenchyma of other organs. It is white, but readily coloured by cadaverous transudations and injections; of a rosy tint in some individuals, from the fullness of its bloodvessels. It never shares in the colouring matter of the epidermis. Beneath it are easily seen the vessels and nerves which penetrate it, and openings for glandular bodies. The absorbent vessels escape from it. Externally (Pl. I. Fig. 1, *j*,) it is elevated into symmetrically arranged, conical eminences, disposed in straight or somewhat curved lines, (Pl. I. Fig. 1, *k*,) separated by furrows, (Pl. I. Fig. 1, *m*,) running in the same direction. Each prominent line is divided transversely by small fissures, at the bottom of which is seen a hole, (Pl. I. Fig. 1, *t*,) On its external surface, the dermis terminates in a membrane, which appears to confound itself with the papillary organs and with those for the secretion of the colouring matter. This external surface is perforated for the passage of the secreting and absorbing apparatus. The history of the dermis must be completed when speaking of the organs with which it is connected. It may be isolated by dissection as far as its external surface, where it is so confounded with the parenchyma of the secreting and sensitive apparatus that it is impossible to distinguish them. In addition to the organs here mentioned, as existing in the internal surface of the dermis, Gurlt mentions the hair follicles which project into the subdermic tissue.

CHAPTER II. *The Papillæ (appareil neurothèle, or mammillary nervous apparatus.* The oblique course of the nerves in the substance of the dermis renders it necessary that their points of entrance and exit should be ascertained previous to making an attempt to follow them; otherwise they are divided by any incision. But, with some care, very thin bundles of pulpy filaments, which penetrate the bases of the papillæ, may be distinguished and isolated, between the excretory canals on the surface of the dermis, (Pl. I. Fig. 5.) These papillæ (Pl. I. Fig. 3, *a*, Fig. 12, *b*, Pl. II. Fig. 1, *e*,) arranged in a continuous series, are ordinarily bifid or trifid; separated transversely by the intervals which give passage to the sudoriferous canals, and longitudinally by the furrows from which the epidermic matter escapes. Their form is that of a small cone, the base of which vanishes in the cutis; the summit terminating in a blunt point. Each papilla penetrates the epidermis, so that the

internal surface of the latter represents exactly the number and arrangement of the former, (Pl. I., Fig. 1, f.) When forcibly separating these two portions of the skin, the papillæ adhere to the dermis by their bases, whilst the epidermis is readily detached from them. Their direction is oblique. Besides a neurilema which they derive from the dermis, (Pl. I., Fig. 5,) the epidermis furnishes them with a proper sheath, (Pl. I., Fig. 6.) Their summit is not pierced by any aperture. In the skin of the whale, they are remarkably developed, and differ but in form from those of the human subject. The length of the papillæ varies with the thickness of the skin in different parts of the same animal. In the whale, their bases, confounded with the dermis by a bundle of radicles, is marked by striæ, which insensibly disappear towards the termination of these bodies; the extremity being somewhat enlarged. They end not far from the surface of the epidermis. Their external surface is white, pearly, opaque. Magnified to an extreme degree, the body of the nerve presents, through the neurilema, slight undulated striæ, which, coming from their bases, become less marked in proportion as they creep towards the swollen extremity, where they appear to terminate in concentric semicircles. This surface is smooth and even. No process is detached to communicate with the neighbouring parts. After every examination, nothing but a white dense tissue, quite analogous to the nervous, has been seen. For a long time the striæ, apparent externally, were not separable into bundles. With some trouble an internal nutritive vessel was found. On making a transverse section of an injected papilla in the human skin, at least two vessels are found, which appear to unite so as to form a loop. The centre of the papilla seems to contain a pulpy matter. The papillæ of the whale, compared with the human papillæ, hitherto ill observed, leave no longer room for doubt as to their structure and sensitive functions. The papillæ of the negro do not differ from those of the white. MM. Breschet and Roussel de Vauzème dissent from the common opinion that the proper papillæ of the tongue are the organs of the sense of taste; on the ground, that in some animals (for instance, the ox,) they are covered by a horny case, more or less thick, which opposes the functions attributed to them; but that in their interstices, beneath a thin epithelium, a similar papillary structure to that of the skin is observable. Here they would exclusively place the sense of taste. The other papillæ they conceive to be but accessory, and rather constituting an organ of touch; their number being too limited for a nervous system, such as that of taste, and their structure assimilating them more or less to horns, hoofs, &c. Their direction, from before backwards, appears appropriated to draw the food into the pharynx, to multiply its points of contact with the tongue, and render it more perceptible to the sensitive papillæ of the interstices. They may also serve for a special sense combined with that of taste; and possibly the two orders of papillæ may differ only in the dispo-



sition of their envelope. There is certainly something rather confused and indefinite in these remarks on the papillæ of the tongue; but that its proper papillæ are not organs of taste we should hesitate to decide; because, until we know in what the sense of taste differs from that of touch, we cannot say that the structure in the ox is not adapted to it; and, in the absence of direct evidence to the contrary, we should infer that what constituted a peculiarity in the nervous structure of the tongue was subservient to its proper function. We know also that the tongue is a very delicate tactile organ, and the French authors mention that a similar papillary structure to that of the skin, and which is also found in the interstices of the proper papillæ of the tongue, to which they ascribe the sense of taste, is found in the mucous membrane of the nose and throat.

They proceed to remark, that the papillæ of the dermis are always found in an area circumscribed by the secreting organs of the epidermis. There can be no doubt of the purely nervous character of the papillæ, if that part of the dermis be examined where they end; the same order existing in the interior of the dermis as at its surface. The prominent lines correspond to the nerves; their interstices to the sudoriferous canals and inhalent vessels; in the bottom of the furrows is found the source of the epidermis. If the tactile sense is refused to the papillæ, what other organ in the skin can be said to possess this function? The nerves which supply the skin may be seen in three different conditions: (1,) in the subcutaneous tissue, where they do not differ from other nerves coming from the spinal marrow; (2,) within the substance of the dermis, where they become soft, flexuous, capillary; (3,) on its external surface, where they are transformed into symmetrical papillary eminences. It is probable that the nerves detach their neurilema on arriving at the dermis. When, however, they reach the external surface of the dermis, they are certainly covered by its external membrane. Thus the sense of touch is provided, as those of sight and hearing, with a peculiar apparatus, consisting of—A. Principal part: (1,) tactile nerve terminating in a blunt point. B. Accessory or protecting parts: (2,) dermis, containing the nerve within its substance; (3,) papillary neurilema, furnished by the dermis; (4,) proper sheath; modified, and of epidermis; the organ of protection; (5,) thin layer of epidermis covering the sheath of the papilla, and indispensable to the exercise of touch. If any of these is wanting, or undergoes certain modifications, touch cannot be exercised. It is evident that the dermis, the neurilema, the proper sheath of the epidermis, are to the tactile nerves that which the complicated apparatus of the organs of sight and sound are to the optic and auditory nerves.

The anastomotic termination of the nervous filaments, already described as having been observed in the papillæ of the whale, is brought forward as confirmatory of the opinion already advanced by MM. Prevost and Dumas, on the mode in which the ultimate termination of nerves is effected. The appearance of concentric

loops at the points of the papillæ, although the possibility of its being an optical illusion is admitted, has been so frequently seen, that MM. Breschet and Roussel de Vauzème believe that they have discovered the truth. Against the opinion advanced by Steller, and to which that of Blainville somewhat approximates, that the papillary bodies in the cetaceæ are agglutinated hairs, the following characteristics of the papillæ are considered as conclusive: Their whiteness; their olivary termination within the epidermis; the communication of their bases with the nerves of the cutis, where the papillæ have neither a fixed termination nor a bulbous enlargement, and the filamentous appearance which is observed beneath the microscope. Rapp considers the papillæ as true vessels, that they very much resemble the flocculi of the duodenal mucous membrane of the mammiferæ and of many birds, and that they are the secreting organs of the matter constituting the rete of Malpighi. This function of secretion is denied to them by the French authors, who regard them as exclusively nervous organs.

It would be far to exceed our limits were we to enter with minuteness into the various opinions which have been entertained respecting the nature of the cutaneous papillæ. There appears, however, much reason to believe that the French authors have somewhat limited their functions in considering them exclusively nervous, and that, by ascribing to them the simple function of secretion, M. Rapp has fallen into an opposite error. We are disposed to believe that they are both organs of sensation and of secretion. The chief grounds of objection to the opinions of MM. Breschet and Roussel de Vauzème are, that the papillæ are far more vascular than they are disposed to admit, and that these vessels are probably partly the source of the epidermis; a function which they have ascribed to other organs, the existence of which is doubtful.

Largely as they have entered into the history of their subject, they have entirely neglected to notice the opinions of some of the older anatomists, whose discoveries have in many points preceded their own. Malpighi was the first to describe the papillary bodies, in his work "*De externo Tactus Organo*," 1686. He considered them as organs of touch, but does not appear to have had any very accurate knowledge of them. Ruysch, in describing a drawing in the first number of the *Thesaurus Anatomicus*, says, "Tab. 4, Fig. 9, represents a portion of the nipple of the whale's udder, the cutaneous papillæ of which I have separated into their component parts in pure water; that is, each papilla consists of many nervous fibres. . . . But, on account of the intimate adhesion of their fibres, I have never been able to effect this dissolution of the cutaneous papillæ in man."\*

\* Tab. i. fig. ix. Theas. Anat. i. representat portionem papillæ uberis Balæne cujus papillæ cutaneæ a me dissolutæ sunt in aqua simplici, id est, singulæ papillæ ex multis fibris nervosis constitutæ quidem sunt. . . . In homine autem hanc dissolutionem papillarum cutanearum nunquam peragere potui utpote fibris sibi invicem firmitus coherentibus.—*Thesaurus Anatomicus Primus*.

Kaau dissected the subcutaneous nerves as far as the papillæ. In objecting to the notion that the three constituent parts of the skin were formed by the neurilemas of the nerves, which had followed their course from the meninges of the brain, he says, "These (the subcutaneous nerves), in proportion as they approach the cutis, become increasingly delicate, until there arise from them very small and innumerable branches, which enter the cutis, and approach the papillæ in which they are arranged. That they are, as far as this, still enclosed in their investing tunics, I am convinced; for I have followed them to this point, by means of a microscope and a very fine needle, the contact of which they bear in this situation."\* MM. Breschet and Vauzème are unable to decide whether the subcutaneous nerves detach their neurilema on entering the dermis, and suppose some such change to take place as that which happens to the optic nerve when entering the sclerotic coat. But, as Kaau observes, unless the filaments within the dermis were still enclosed in their coverings, it would scarcely be possible to follow their course. Sacretaire has distinctly mentioned the union of the extremities of the nervous filaments constituting the papillæ. Speaking of those in the palms of the hands, he remarks: "In these parts are situated certain corpuscles, composed of four, five, or more filaments, as it were, arising from the cutis, connected together by their extremities, and arranged in a definite order."†

The French authors speak of the blood-vessels of the papillæ as exclusively appropriated to their own nutrition; all the products which are found external to the dermis and papillæ being secreted in the interstices of these bodies. We shall hereafter notice their opinions on the source of the epidermis; but, as the extremely vascular nature of the whole surface on which the epidermis rests is a main reason for the difference of our opinion, we must state our doubts respecting what they have said of the papillæ. They say that, in these bodies in man, there are at least two blood-vessels which appear to unite and form an arch; that their external surface is white, pearly, opaque; and that, notwithstanding all their endeavours, they have been only able to detect a tissue entirely analogous to that of nerves. They mention likewise that an external membrane, supplied by the outer surface of the dermis, is continued over the papillæ. This description is quite at variance with the general opinion, as well as with the appearance of well-injected preparations. Can it be supposed that the French authors have been unsuccessful in their injections? In some injected prepara-

\* Hi (nervi subcutanei) quoque propiores cuti, eo sunt teneriores, donec ex hinc, minimi, innumeri adsurgunt ramuli, qui cutim intrant, ad papillas tendunt, et in iis ordinantur. Imo vero has huc usque servare, quibus investuntur tunicas affirmo. Eo usque prosecutus sum, microscopio et acu tenuissima, cujus attactum et in hoc loco ferunt. (*Kaau, Perspiratio dicta Hippocratici.* 1738.)

† In his enim partibus locantur corpuscula quædam, composita ex quatuor, quinque vel plurimis quasi filamentis e cute surgentibus, suis extremis inter se connexis, certoque ordine disponuntur. (*Dissertatio Med. Inaug. de Com. Corp. Hum. Integ.* 1737.)

tions, it will be seen that some of the papillæ on the ends of the fingers terminate in white points, that others are entirely coloured by the fluid; and into other parts of the skin the injection has passed in such a manner as to render the papillæ, as well as their interstices, uniformly coloured. It would be tedious to quote authorities in support of their high vascularity. Malpighi, Ruysch, Albinus, Kaau, Sacretaire, Haller, and, in later times, Bichat, Beclard, Gaultier, Chevalier, Rapp, and others, have all asserted this fact.

\* With regard to the external covering of the papillæ, which is said to be derived from the external surface of the dermis, the French authors speak of it as white and fibrous; but they say nothing concerning its vascularity.

The anastomotic appearance of the extremities of the nervous filaments, it is admitted, may arise from an optical illusion; and although this mode of termination is said to be in concentric semi-circles, the drawings do not represent a concentric arrangement.

MM. Breschet and Roussel de Vauzème have not particularly noticed the distinction between the common sensibility and the tactile properties of the skin. They say that tact is exercised by the thousands of organs communicating together by means of a nervous plexus, extended over the whole surface of the body, from one papilla to another; and that it is this lateral correspondence of all the papillæ, or, in other words, the organ of touch established in the skin, which render it the most sensible part of the whole body. The existence of the peculiar apparatus described is said to be essential to the exercise of the function, which is destroyed by the absence or alteration of any one of its constituent parts. But, on the following grounds, there is reason to doubt whether this entire apparatus is necessary for either common sensation alone, or for it in combination with tact. M. Gurlt observes, that the papillary structure appears to be entirely wanting on the hairy scalp. The French authors have described it as existing in the heel. From the experiments of Professor Weber, confirmed by Dr. Allen Thompson, (Edinb. Med. and Surg. Journal, No. 116,) it appears that the heel possesses a tactile sense very little superior to that of the scalp; and that, in the latter, this sense is more acute than in various parts of the body; although MM. Breschet and Roussel de Vauzème have spoken of the papillæ and their coverings as existing over the whole body. There appears, therefore, reason to suspect that, even if the compound structure which has been described actually exists, it is confined to certain localities, and that both the function of tact and that of common sensation may be carried on by means of some much more simple apparatus.

CHAPTER III. is devoted to the *Sudorific Organs and their Ducts* (*appareil diapnogène et canaux sudorifères ou hidrophores*).

The exhalent organ consists of a secreting parenchyma and an excretory duct. The parenchyma is situated in the substance of

the dermis, surrounded by numerous capillaries which are attached to it. Its form is that of a somewhat distended sac, whence a spiral duct issues, which, traversing the dermis, escapes from it at the transverse fissure situated between the papillæ; thence it passes obliquely and in a spiral form through the epidermis, on the surface of which its termination is indicated by a slight depression or pore in the prominent lines of the cuticle. In consequence of its spiral course, the duct opens on the surface obliquely, and the aperture is closed by the contact of the upper and lower parietes of the tube. In examining the transudation of the sweat, the first drop is seen to be preceded by an elevation of the cuticle, in the manner of a valve. At the exit of these canals from the dermis, they are accompanied by an inhalent vessel, which enters into the infundibulum of the papillæ. The spiral form of these tubes accounts for the fact that the cuticle has always appeared imperforate. Thus, when the epidermis is torn from the dermis, the lacerated ducts retract and stop up the opening. In the skin of the heel, by a successive removal of all the layers of the epidermis, these tubes may be followed from the surface to the intervals of the papillæ; the situation of the tubes being indicated by an oblique depression produced by the contact of its sides; and, by gentle pressure, a drop of sweat may be made to exude from this orifice. The most convincing proof that these spiral bodies are ducts is the escape of sweat from the pores of the palms of the hands and points of the fingers. (Pl. I. Fig. 4; Pl. II. Fig. 1, *f, g*.)

M. Gurlt has given a more minute account of the structure of the sudorific glands, having examined them in various domestic mammalia. He has described also certain peculiarities in these organs existing in the same individual, which tend to correct some errors into which it appears probable that the French authors have fallen. He says, that they lie deeper in the substance of the dermis than the sebaceous glands, and extend more plentifully beyond into the adipose tissue. They exist in every part of the skin, but differ, in the different situations, in size, form, and also partly in texture. In the human palm (Pl. II. Fig. 3, *g*.) and sole, they are larger than elsewhere, and of a roundish oval shape; in the skin of the head, they are more oblong, (Pl. II. Fig. 2, *i*.) They are readily recognized, by the naked eye, in the loose cellular tissue beneath the cutis of the parts of generation of the horse. In the ox, the glands are very small and round, and everywhere uniform in shape and size. Other varieties are noticed as existing in different animals. In regard to texture and colour they are of two kinds. In man, the horse, sheep, swine, and dog, (on the soles,) they consist of a canal or tube many times doubled on itself; and in this respect they greatly resemble the texture of the testicle: in the ox they are round, and in the hairy parts of the dog, long, small sheaths, without any trace of windings or foldings. In most cases they are colourless and almost transparent; on the genitals of the horse they

are brown-coloured, which is owing to the presence of small, brown granules, contained in the twisted tube. In those of the dog's foot there are likewise granules to be seen, but they are almost colourless; at least, the gland does not put on any coloured appearance from their presence. In the representations given of these organs by the French authors, the glands are too small in proportion to their canals. At the superficial termination of these ducts, it is probable that the epidermis dips into them; as, in animals with coloured epidermis, we observe the same colour at the entrance of the perspiratory pores, and only at some distance do they become colourless and transparent; moreover, they have entirely the same texture as the epidermis. In the human hand and foot, the ducts, in passing outwards through the dermis amid the tactile papillæ, are very slightly or not at all spiral; but, in the epidermis, they form a greater or less number of spiral windings, which are remarkably well seen in a piece of skin which has been indurated and rendered transparent by means of Liq. pot. carb. (Pl. II. Fig. 3, *h, h.*) The number of these windings increases with the diameter of the cuticle. For the representation of these glands, recent skin was always employed. In no other part of the human skin do the perspiratory canals exhibit such fine spiral windings; and, among domestic animals, they are spiral only in the sheep; in all others, they are merely serpentine.

Weadt has also remarked, that these vessels, in the number of their windings and in their direction through the skin, vary in different parts of the body; that in the thinnest parts of the skin they may make but half a wind; and that, in such situations, they are less regularly placed than in the hand and foot. He found that, in the right hand, these spiral tubes were bent from left to right, and in the contrary direction in the left hand.

The merit of the discovery of this sudorific apparatus, although it has given rise to some dispute, appears to be attributable to MM. Breschet and Roussel de Vauzème. But there can be no doubt that some of the older anatomists were aware of the existence of the glandular part of this apparatus. Malpighi speaks of glands situated beneath the dermis, and opening by excretory ducts. These apertures he terms "*ora sudoris.*" That by these, as has been asserted, he could not have meant the sebaceous glands, is evident from his having described them as existing at the points of the fingers, (*de externo tactus organo.*) From the description of these organs which is given by Winslow, and which corresponds so exactly with that of Gurlt, there can be no doubt that he was aware of their existence and character. Speaking of these glands, he says, "*Feu M. Duvernay a montré à l'Académie Royale des Sciences, assez clairement, la structure de quelques uns de ces glandes cutanées, qui paroissent comme des circonvolutions des petits intestins, chargés de vaisseaux capillaires.*" (Compare this description with Gurlt's drawing. Pl. II. Fig. 3, *g*, and Fig. 2, *i.*) The mode in

which the epidermis was separated from the dermis will account for the spiral ducts not having been detected in the latter part of their course, and this form is often absent in the dermis. Thus, the French authors can scarcely be considered as the discoverers of the glands, although the character of their ducts does not appear to have been previously described.

CHAPTER IV. *The inhalent Apparatus of the Integuments.* To examine this effectually, it is necessary to take a thin slice of epidermis, the most external; to select it soft, white, and somewhat friable; to place it on a piece of glass, moistened with water, and then to tear it with instruments with curved points. The inhalent canals then appear to be situated beneath the most superficial layer of the epidermis, in the form of isolated radicles, spread throughout the epidermis, and, after frequent anastomoses, penetrating the cutis by the infundibulum of the papillæ near the sudoriferous canals. All these vascular trunks, symmetrically arranged in the interstitial fissures which they traverse, communicate in the cutis, beneath the papillæ, with canals forming a common plexus, lying at a right angle with the furrows, (Pl. I. Fig. 7, *a*.) Notwithstanding all our endeavours, (say the French authors,) we have very rarely been able to see this termination of the inhalents of the epidermis. These vessels, of extreme tenuity, ramified in forming loops in a hard, elastic, resisting substance, easily break, and scarcely any thing can be seen but scattered fragments. Under the microscope, their colour is white and silvery; (Pl. I. Fig. 8, 9, 10,) through the parietes of these tubes, a species of diaphragm is here and there often observed; proving, if not an identity of structure, at least an analogy with that of lymphatic vessels or veins; sometimes they are knotted, at others smooth and uniform, and generally but little elastic. By a feeble lens, or even the naked eye, these vessels may be seen on scraping the surface of the epidermis; they are sometimes very long and dry, and resemble very fine hairs. In order to see the entrance of these vessels into the cutis, it is necessary to separate the epidermis gently, and then by a lens it may be seen that each spiral vessel is accompanied by an inhalent, and that these parts are ultimately united near the cutis. The inhalent vessel soon separates, so that the sudoriferous duct enters into the epidermic tissue by the interpapillar division, whilst the inhalent vessel diverges to the side of the epidermic partition, which corresponds to the furrows of the cutis. The microscope shows the distinctions between these two organs. The sudoriferous canal is larger and covered by little imbricated laminæ, soft, serpentine, and elastic; the inhalent vessel is smooth, silvery, straight, or slightly curved, traversed by a visible central canal, imperfectly interrupted by small partitions. If the epidermic tissue be hastily separated, the inhalent vessels are torn, and nothing remains but the spiral canals, which may be extended considerably. These are farther distinguished by the anastomoses of the inhalents, which are sometimes

plexiform; a character which never belongs to the sudoriferous ducts. An experiment which would prove that these vessels have a direct communication with the arterial or venous system, and that they do not correspond to the lymphatic, is the following: If a fine injection is made into the chief artery of a limb, this injection stops at the cutis, as has always happened in our injections. If the skin be then cut (*en dédolant*), and pressure be made with the scalpel from within to without the injected part, the inhalent vessels of the epidermis become coloured, and are seen ramifying and anastomosing beneath the most superficial layer of the epidermis. The sudoriferous canals and the inhalents cannot be dissected throughout their whole extent, on account of the resisting nature of the epidermis; but the one are seen in fragments beneath a lens, the other are detected entire by means of injections. We have found these inhalents, with their distinctive characters, in the skin of the negro and of the elephant, and have recognised them in the skin of the whale, the porpoise, tortoise, and various fish. Whatever may be the colour of the epidermis, the inhalent canals, the nerves, and sudoriferous ducts are always white. We have seen these inhalent canals in all the skins which we have examined; a tissue in which, hitherto, the existence of any vessels has been denied. But the nature of these vessels may be questioned. If not absorbents, what are they? We cannot consider that the difference between their structure and that of those in the internal parts of the body is a sufficient reason for refusing to them the function of absorption. Every thing which is external to the cutis presents a peculiar appearance: the nerves by their mode of termination; the spiral sudoriferous tubes having no analogy with the other animal tissues. The apparent solidity of the absorbent vessels, their anastomoses and ramifications, appear to be appropriated to the tissue through which they have to pass. Soft and vacillating lymphatics would have been out of character with the epidermis, the nature of which is very dilatable and compressible. However, these characters belong much more to these vessels when in an empty state, than when distended by injection. They then resemble lymphatic vessels or venous capillaries. As there is no other function attributable to them, we must consider these vessels as inhalent: first, because their radicles are prolonged to the most superficial layer of the epidermis, because their texture assimilates them to lymphatics, and because, absorption being a function of the skin, we find no other organ appropriated to this function. Not having been able to see the commencement of these inhalent vessels, nor any open mouths in them, we suppose that absorption takes place by previous imbibition of the epidermic tissue. The termination of the lacteals in the intestines has not been seen. There is certainly identity both of the mode of termination and of the function of the two integuments. Great diversity of opinion has existed as to the mode in which absorption takes place through the skin. If, by pressing the



injected matter from the arterial vessels, we have not effected a solution of continuity, the experiment proves that these inhalents do not communicate with the general lymphatic system, but with that of the capillaries; and this favours the opinion of Magendie, who considers the veins as the principal agents of absorption: or, if these vessels are to be considered as organs distinct from the sanguineous system, they can be considered but as varieties of the venous system, with which they are always in communication.

MM. Breschet and Roussel de Vauzème then enter at some length into the general opinions on the structure of the lymphatics. We must confine ourselves to such remarks on this part of the subject as are essential to an elucidation of their opinions. It seems to be generally admitted that apertures have not yet been found in lymphatic or lacteal vessels. The investigations of Dr. Boehn, which were noticed in our second Number, tend very much to reconcile the differences of opinion which have existed on this subject; and to them we refer for an account of the structure of the intestinal mucous membrane, which has apparently given rise to the idea that the lacteals terminated in the intestine by open mouths. The opinion of Blumenbach, that intestinal absorption took place through the medium of a laminar tissue, approaches nearly to that of the French authors on the origins of the inhalent canals.

Fohmann was the first who distinctly recognized a system of cutaneous lymphatics. From his injections, it appears that these vessels exist in so large a number that the cutis appears to be entirely formed of them. These vessels anastomose and form a network, pierce the cutis in all parts, and cover its two surfaces in such a manner that a needle could not be inserted without implicating a branch of extreme minuteness on the external surface of the cutis. This lymphatic plexus is not supplied with valves. Instead of them are seen contractions or valves of an irregular form, and so little developed as not to impede the passage of mercury in every direction. The perfect valves belong only to the branches and small trunks. Besides these imperfect valves, the vascular network contains here and there small pouches, which consist of dilated vessels, corresponding most frequently to their points of union. No apertures are discoverable in these vessels. Although, in their disposition, the lymphatic vessels have the greatest analogy with the blood-vessels of the skin, (for, as the latter, they form plexuses,) there is a point where the lymphatics pass the arteries and veins, and alone constitute the last layer of the plexus. Panizza found that, after having made a very fine injection of the lymphatics of the cutis, the epidermis might be removed without the escape of any mercury, and no traces of lymphatic vessels were visible in the membrane taken away.

MM. Breschet and Roussel de Vauzème employed various methods of injecting the cutaneous lymphatics: sometimes by

introducing the tube into a lymphatic vessel of the leg, whence the mercury passed as far as the cutaneous system of the groin; at others, by passing the tube directly into the skin at the part where it was wished to examine these vessels, having previously injected the capillary system of the part, to avoid the danger of confounding the two orders of vessels. (Pl. II. Fig. 4, 5.)

There is an extensive plexus of lymphatics in the skin of the scrotum. Pl. II. Figs. 4, 6, represent these vessels in a portion of the scrotum, the prepuce, and glans of an infant. The removal of the epidermis, after an injection, never gave rise to the escape of mercury; and it was evident that the vessels distended by the mercury were distinct from those into which the colouring matter had passed. The lymphatic and sanguineous vessels appear to form distinct planes, situated in the substance of the mucous body, around the papillæ, the lamellated processes of the epidermis, and the sudoriferous canals. The inhalent vessels, in their empty state, appear to be the same organs as those into which, in other parts, the mercury has been injected. If, in their dry and empty state, their retiform arrangement has not been so easily recognized, it is owing to the circumstance that microscopic investigations could only be made on a small portion of the skin, and in which every vascular trunk was isolated by the rupture of its lateral anastomotic branches, some of the remains of which could sometimes be still recognized. The origin of the inhalents must be considered a point of anatomy still uncertain, and one which, if it has not been able to be decided on the surface of the intestines, presents still greater difficulties in the cutaneous system.

It is to be regretted that M. Gurlt has made no allusion to the vessels of the epidermis, which the French authors describe as inhalents. The existence of vessels in the epidermis has been previously maintained. Haller speaks of them as running along its inferior surface; but he suspected that, in the instance in which he had observed them, they might have been separated from the external surface of the dermis. The vascularity of a layer of the epidermis, described as the tunica quarta by some French anatomists, is very manifest in some injected preparations in the museum of St. Thomas's Hospital. There can be no doubt that these vessels belong to the sanguiferous system. Are they the same as those which the French authors have described as inhalents? This appears probable on several grounds; for they deny the existence of blood-vessels in this part, and describe the vascular system which we have lately noticed as subservient to the function of inhalation, for the three following reasons: (1.) because these vessels are prolonged to the most superficial layer of the epidermis; (2.) because their texture assimilates them to lymphatics; (3.) because absorption being a function of the skin, we find no other organ appropriated to this function. We may reply to the first argument in favour of their inhalent function by the question, Supposing

them to be blood-vessels, why should they not be continued to the most superficial layer of the epidermis? The value of the second argument is easily to be estimated from what has already been quoted from the French authors, where it will be seen that they have endeavoured to explain why the lymphatics of the skin should *not* be like those of other parts of the body. The appearance of partial septa within these vessels is one which might be owing to an optical illusion beneath the microscope; and indeed it is difficult to imagine how so accurate an acquaintance with their extent, or even existence, could have been ascertained through the coats of vessels which are described as "white and silvery;" characters which are incompatible with much transparency. To the argument which is derived from the absorbent functions of the skin, and the absence of other organs appropriated to this function, it may be replied, that the existence of any inhalent function of the skin is by many physiologists denied; and those who maintain it have not always made due allowance for the fallacies to which their reasonings are exposed, from absorption in the lungs, the effects of friction, &c. It can only be admitted, from our present knowledge, that the skin is possessed of a very feeble absorbing power; and it is probable that this is exerted chiefly, if not entirely, in certain localities. But these inhalent vessels are said to exist in very great numbers, corresponding in fact to those of the perspiratory ducts. Admitting the existence of some degree of absorbent function in the skin, it cannot be said that organs do not exist independently of these supposed inhalent vessels, by which this function may be exercised. There is, as MM. Breschet and Roussel de Vauzème have shown, an extensive system of superficial cutaneous lymphatics. In order that matters from without may come in contact with these inhalent vessels, it is necessary to admit previous imbibition of the external surface of the epidermis; and it is only to suppose that this imbibition is a power possessed by the remainder of the same tissue to account for the mode in which any matters which are imbibed may come within the influence of the superficial cutaneous lymphatics.

There are other objections to admitting that these vessels are inhalents. Whilst reasoning on their functions, and as to whether they are the same as those into which the mercury was injected, it is said that the difficulty, in their empty state, of recognizing their reticular arrangement, was owing to the extremely small portion of skin which could be examined by the microscope, in which every vascular trunk was isolated by the rupture of its lateral anastomotic branches; and yet representations are given of entire vessels with their branches, the arrangement of which is totally different from that of the lymphatics, and much more like that which in other parts is given to arterial vessels. (Compare Pl. I. Figs. 8, 9, 10, with Pl. II. Fig. 4.) Thus, the arrangement must either have been seen, so as to admit of an inference being drawn from it,

or the representation is imaginary. The former alternative would induce the belief that the vessels are not like lymphatics; the latter, that their existence is somewhat doubtful. The inference, too, that they are the same order of vessels as those which in other parts admitted the mercurial injections, is scarcely admissible, if, as is asserted, a coloured injection of the blood-vessels of the cutis might be pressed into them, whilst they never admitted the mercury. Of the nature also of the canals (Pl. I. Fig. 7, *a*), with which these vessels are said to communicate beneath the papillæ, or of what system they might be supposed by injections to form a part, we are not very accurately informed. We think, therefore, that the functions of these vessels is a subject for further investigation.

CHAPTER V. *Mucific Apparatus, (Appareil blénno'gene,) or organ of the mucous matter.* It is necessary, in order to examine this well, to have a fresh skin, injected red with blood. In examining this from within outwards are said to be found—I. In the cutis, (1,) a mucific apparatus, composed of a secreting gland and an excretory duct of the secreted or mucous matter, which becomes epidermis by dessication; (2,) a colorific apparatus, composed of a secreting parenchyma and excretory canals of the secreted product, (scaly corpuscles,) which, uniting with the mucous matter, gives rise to the various tints of the skin, hair, horn, feathers, scales, &c. II. External to the cutis, and the result of the mixture of the two secretions: (1,) epidermis; (2,) hairs, feathers, horns, hoofs, &c.

1. Mucific apparatus. At the bottom of the dermis (Pl. II. Fig. 1, *j*), may be seen small, reddish glands, which, when examined by a simple lens, appear crimped, uneven, furrowed by blood-vessels, (Pl. I. Fig. 11.) They are enveloped in a loose cellular membrane, in an atmosphere of small adipose vesicles, transparent and accumulated like little pearls. From the summit of each gland passes a tube, which traverses the dermis and opens in the bottom of its furrows. This canal is enveloped in a diaphanous cellular membrane. Capillary vessels adhere to the tube and gland: at the base of the latter, a vessel of considerable size has often been seen to enter. The canals form a regular colonnade in the substance of the dermis. The glands are sometimes placed at very variable heights, and appear to communicate by intermediate ducts. The rows of the excretory ducts correspond to the length of the furrows; that is to say, they are perpendicular to the plane of the secreting parenchyma of the colorific organs.

2. Colorific apparatus. This is situated in the external part of the dermis, in the depths of its furrows, beneath and between the papillæ. (Pl. II. Fig. 1, *i*.) Its superior part is surmounted by a great number of short excretory ducts, which open at the bottom of the furrows, and which secrete a peculiar matter. (Pl. I. Fig. 13, *d*.) Its inferior surface is thickly set with capillary vessels, and in relation with the excretory tubes of the mucific glands. Its structure is areolar, spongy, resistant. This parenchyma and its excre-

tory ducts grow red with great facility, because they are essentially vascular; they form a limit which, in the normal state, the arterial system never passes, and where it ceases to exist in bringing its last contribution. We except the nutritive vessels of the papillæ, which extend somewhat higher. When this tissue is torn, a number of little filaments are found, whence there escape scales or colourless corpuscles in great quantity. This reservoir of scales exists in no other part of the cutis. This tissue may be regarded as an organ formed of a peculiar substance, penetrated by blood-vessels, and giving off excretory ducts, which open at the same parts as those of the mucific glands, and pour into the mucus of these glands the granulations of pigment, or colouring matter properly called.

3. The products excreted constitute the epidermis, (Pl. I. Fig. 2.) Its inferior surface exhibits inequalities, which represent the form of the external surface of the dermis. This is the rete mucosum of Malpighi. Two partitions are here distinguished: one, more in relief, or dermic, filling the furrows of the dermis, and adhering to it by the prolongations issuing from the excretory ducts of the colorific and mucific organs. It is by these that the epidermis is produced and renewed. In separating the epidermis, a considerable resistance is always found when it is extracted from the furrows of the dermis, on account of the roots which it there seems to project, (Pl. I. Fig. 12, *d*,) although it is rare to perceive them, because it generally detaches itself as smoothly as if it were only placed in the depth of the furrow. On the lateral parts are seen small apertures for the passage of the inhalent vessels. The other partition, termed interpapillar, occupies the interval left by the bifid papillæ, and prolongs itself into the interstices around the sudoriferous and inhalent canals. On the borders of this, the torn fragments of the sudoriferous canals are always visible. To the right and left of this part are the sheaths, as it were, into which the papillæ penetrate obliquely. The epidermis which circumscribes these openings is fixed to the two partitions, which thus resemble a timber-work (*charpente*,) sustaining this curious structure. On the superior surface of the epidermis there exist prominent lines, separated by the furrows, (Pl. I. Fig. 1, *e*.) Under a lens, these lines present, alternately, small papillary eminences and fissures or slight depressions, which contain the orifices of the sudoriferous canals. The prominent lines have an imbricated arrangement, so that, in the movements of contraction, they advance over one another, as the scales of a serpent; whilst, during extension, they separate, and leave the bottoms of the furrows exposed. The human epidermis is of a dull white colour, elastic, hygrometric, and transparent. It is most difficult to examine satisfactorily. It rebounds under the scalpel like caoutchouc; when moist, it swells and allows nothing to be seen; and, when dry, it scales off and whitens, with the slightest contact or least degree of pressure.

The epidermis of the whale is more easily examined, and its structure throws much light on that of the human skin. The epidermis is secreted by a special apparatus, and appears to become organized like false membranes; hence the propriety of the term tissue. When examined by the naked eye from without inwards, the epidermis of the whale presents two layers; an external one, parallel to the plane of the cutis, and an internal one, composed of straight fibres, placed perpendicularly between the cutis and the external layer. Through this dark tissue the summits of the white nervous papillæ are seen enveloped by their sheaths. Its inferior surface contains openings for the papillary cones. To analyze this epidermis, it is necessary to take a very fine perpendicular fibre, and to place it in the focus of a lens upon a glass slightly moistened. The tissue is then found to consist of small, imbricated, scaly bodies, upon a very fine cellular woof. These scales readily separate, and tinge water of a black colour, under the appearance of granulations. Considered singly, each scale has the form of a fig or of a spatula with blunt edges. Its two surfaces are black in the upper third of their extent; its free border somewhat rounded, its pedicle contracted and whitish. In order to study it, it is necessary to take a small quantity of the dark matter at the base of the fibre near the dermis, and to stir it in a few drops of water upon a glass. A fibre of epidermis, reduced to its most simple state by dissection, and examined by a microscope, is found to consist of a series of scales or flattened cones, inserted one into the other. Each scaly portion is applied upon that which follows, and is covered somewhat by that which precedes it, in the same manner as a pine-apple. This fibre is elastic and somewhat resistant, but its component parts separate, and may thus be examined. The points of the origin of the epidermis are very well seen in the skin of the whale, on account of the contrast between its dark colour and the whiteness of the dermis. It fills the entire space which is unoccupied by the papillæ. The dark matter is secreted a little previous to its appearance external to the dermis. It is found enclosed in a capsule or dermic membrane, at the bottom of which are little whitish or filamentous tubercles, to which it is closely united: these are the excretory ducts of the colorific apparatus. This development is from within outwards. The matter, which is at first formed almost in a mucous state, pushes forwards the superior layers, which gradually solidify; and this takes place by a successive expulsion of scales and mucus, the external layers of which are always the oldest, the most compact, and the least distinct. From our knowledge of this elementary form, it is easy to derive all the other forms which the epidermic tissue presents. If several of these fibres proceed from the cutis in a straight line, and compressed against each other as in a hurdle, we have a membrane; disposed circularly, a cylinder, a sheath of papillæ, a case to protect them. If the fibres arise, "denso agmine," a thick compact tissue is the consequence,

which will fill the intervals of the papillæ. If, arrived at a certain height, these fibres curve at an angle more or less obtuse, the body will be stratified parallel to the dermis; for dissection shows that the layers are produced by the inflexion of the perpendicular fibres. The sheath which this matter furnishes to the papillæ is formed of a tissue less white than the nervous trunks. It is greyish, and the scales are less numerous and less coloured than in the epidermis proper; there is preponderance of the cellular or mucous woof. This sheath moulds itself perfectly around the papillæ. In the horizontal layer, the scales are more compressed, and very difficult, if not impossible, to detach: hence this portion, although very dark, does not tinge water, because it is not there dissolved into squamules. The increasing and always more intimate adherence of the external layers one with another explains the formation of the numerous epidermic layers, which separate in consequence of maceration, and in which the imbricated form is sufficiently manifest.

Having examined the structure of the epidermis of the whale, the French authors proceed to that of man. A friable portion of the most external part of the epidermis, or of the glutinous mucus of its internal surface, should be placed in water and examined by a lens. In separating these fragments with the point of a scalpel, in the midst of the remains of the inhalent vessels and sudoriferous ducts, an infinity of corpuscles are seen, which, either from the violence employed or from their union with one another, are without determinate shape. The general form of these scales is an irregular trapezium; they are of a certain thickness, striated, white and transparent, and placed upon a very thin areolar membrane. These scales are easily recognised as the product of the colorific apparatus, and, in the pellucid membrane which supports them, the secretion of the mucific apparatus is no longer amorphous. In order to see the origin of the epidermis in the furrows of the dermis, it is necessary to prepare a fine slice of the dermis, injected red, and it will be seen that where the blood ceases at the excretory ducts, the deposition of epidermis commences. This separation is very manifest in the whale. The epidermis, at first secreted mucous and fluid, moulds itself, layer after layer, around the papillæ, envelopes and protects the sudoriferous canals and inhalent vessels, after having acquired a density greater as it approaches the surface. If a portion of the skin of the heel has been sufficiently macerated, and is then cut across the furrows, layers of epidermis are seen to issue from the centre of the furrows, and to develop themselves right and left on the papillæ which they envelope. (Pl. II. Fig. 1, 1.) The two tissues are developed in the same manner as in the whale, the difference consisting only in a variety of form. The epidermis in the negro is everywhere black, excepting in the palms of the hands and soles of the feet. Its structure is the same as in the white; in the black part of the skin the scales are in spatulæ, coloured on the free border as in the whale. On the heel, their form is an irregular polygon, and

they are colourless. Examined by a lens, the skin of the rest of the body does not appear entirely black: it is seen that the colouring matter produced around the papillæ sketches them by forming areolæ, the centre of which appears to be white, because the papillary tissue appears through the transparent epidermis. The areolar woof which supports the scales is always white.

This concludes the account given by MM. Breschet and Roussel de Vauzème of the structure of the skin. The remainder of their work is devoted to the consideration of different opinions respecting the nature of the epidermis and colouring matter, together with a theory of the cause of the various colours presented by the skin and its accessory parts, which we shall briefly notice, after having considered the objections offered by M. Gurlt to the existence of specific organs for the secretion of the epidermis; objections with which, for additional reasons, we are disposed to coincide. In speaking of the epidermis, M. Gurlt notices particularly its intimate union with the whole dermis. He mentions also the granular appearance of its internal surface, from which Wendt inferred that the outer layers were not produced by simple dessication of those within. This difference is not considered as essential, but as temporary, the outer layers being formed by the breaking down or union of these granules. M. Gurlt has been unable to discover the apparatus to which the function of secreting the mucus is ascribed; but, as he is aware that he may be in error, he adduces the following reasons for believing the observations of the French authors to be erroneous. (1.) The supposed glands are, in the plate in which they are represented, very similar to the sudorific glands, in regard to position, figure, and size; and the excretory ducts want merely the spiral form, which form, however, is often absent even in the sudoriferous canals in the cutis. (2.) If the separated layer of the skin be of considerable thickness, we find in it twice as many sudorific glands and ducts as in a thin lamina, and as are represented in the figures of the French authors, and the more deeply seated canals appear to stop at the space between the cuticle and the corium; but, if we compress the lamina a little, they appear also distinctly in the cuticle. (3.) There does not appear to be sufficient space for the discharge and spreading out of a fluid (the mucus of Malpighi,) secreted by glands only; seeing that the dermis and epidermis are so closely connected. The difficulty is removed by supposing that the mucus is secreted by the whole dermis.

In addition to the arguments brought forward by M. Gurlt, we may notice the peculiar views of MM. Breschet and Roussel de Vauzème respecting the limits of the arterial system of the skin; as, if they are correct, the secretion of the epidermis, whether through the medium of a glandular apparatus or not, must take place entirely from the furrows of the dermis. When speaking of



the organs of the colouring matter, which are said to be situated in these furrows, they say that, with the exception of the nutrient arteries of the papillæ, the parenchyma, and the excretory ducts of the colorific apparatus, form a limit, beyond which, in the regular state, the arterial system never extends, and where it ceases to exist in bringing its last contribution. If this were the case, injections would only redden the furrows, and fill the vessel or vessels of the papillæ which they describe as terminating by an arch in their substance. We have already noticed the opinions of many anatomists with respect to the extreme vascularity of the papillæ; a condition which induced Gaultier, who appears not to have perfectly understood their structure, to term them "*bourgeons sanguins*." Beclard says, that "the vessels divide and ramify in the dermis in proportion as they penetrate into its substance, and their last divisions, which are prodigiously multiplied, are distributed in the external surface of this membrane and in the eminences which cover it, in consequence of which these parts are much more vascular than the deeper surface." (*Elem. of General Anat., translated by Knox.*)

The French authors, when speaking of the investing membranes of the papillæ, mention a process of the external surface of the dermis which is continued over them, but they say nothing respecting its vascularity: Eichhorn, who, in the *Archiv. für Anatomie und Physiologie, von Meckel*, 1827, has entered with great minuteness into the structure of the dermis, and who, from certain peculiarities in its structure, has described it as consisting of [three different layers, which are however inseparable, calls the external layer, from its peculiar vascularity "*tunica vasculosa externa corii*." The examination of the exterior of a successfully injected portion of dermis shows an almost entirely coloured surface, with no such limitations as those mentioned: and, in opposition to the limits which the French authors have ascribed to the sanguineous system, we may instance an injected portion of the scrotum of an infant, from which one of their drawings is taken, in which, among the superficial cutaneous lymphatics, are ramifying arterial vessels, (Pl. II., Fig. 4.) And, indeed, there is an equal discrepancy in their own descriptions of the limits of the arterial system of the skin. In that part of their work in which the superficial cutaneous lymphatics are described, they say that there are differences in the arrangement of the sanguineous vascular plexus and the plexus of lymphatic vessels, which prevent their being confounded; that these vessels appear to form distinct planes, situated in the substance of the mucous body (that is, the internal portion of the epidermis,) around the papillæ, the lamellated processes of the epidermis, and the sudoriferous canals. This is quite at variance with their description of the arterial system, when speaking of the colorific apparatus, but probably nearer the truth. On these

accounts we are disposed to coincide with the opinion generally maintained, that the formation of the epidermis is dependent on the whole external surface of the dermis.

M. Gurlt has been likewise unable to discover the colorific apparatus. He says that, in the parts mentioned as containing these organs, he can recognize a stratum of a darker colour than the rest of the dermis; but he cannot discover, on tearing asunder this texture, the small scales mentioned by the French authors, nor the general peculiarities ascribed by them to this tissue. He therefore (although with diffidence,) expresses his doubts, which he considers to be further justified on the following grounds: (1.) The colorific organs are said to exist even in the skin of white men; but, in them, the epidermis is colourless. (2.) In all organs where there exists a brown-black or other pigment, as in the eye, no similar apparatus is perceptible. (3.) In morbid discolorations, as in melanosis, there is, likewise, nothing of the kind.

The first of these can scarcely be admitted as an objection, as the French authors state that, in the white, the scales are white and transparent; and, unless the identity of the colouring matter of melanosis and the skin be shown, there is little force in the third objection. But there are two facts which appear to us almost conclusive against the existence of this colorific apparatus. (1.) MM. Breschet and Roussel de Vauzème mention, as corroborative of their opinions respecting the mode of production, seat, and organic disposition of the colouring matter, that MM. G. Cuvier and Ch. Valenciennes attribute to the cutis the property of secreting beneath the scales a substance of silvery brightness, which is the cause of the brilliancy of some fish; that it consists of small polished laminae like burnished silver, and that, in many fish, much of this matter is secreted in the substance of the peritoneum, and in the coverings which it furnishes to various viscera, and particularly to the swimming bladder. (2.) The colouration of the hair is considered as depending on the same secreting parenchyma as that of the skin; and, in the latter part of their work, the French authors say that the hair originates in a layer much deeper than that which furnishes the pigment, and that that portion of it which is nearest to the bulb is never coloured. They say nothing of the colour of the bulb itself. Pl. II. Fig. 1, *i*, shows the limits of the supposed colouring apparatus; Pl. II. Fig. 2, *d*, represents the depth of the hair follicle and the situation of the bulb. Wendt thus describes the formation of the hair. In the fœtus we see the blackish germ of the hair confined in the sacciform follicle, whose cavity it does not entirely fill. It forms, in the bottom of this, a little club, the thicker part of which, the bulb, is directed towards the bottom of each sack; the point externally. But before the little club shows itself, a vessel is seen, which proceeds to the bottom of each sac, deposits a point of dark pigment, which gradually, by the accession of new pigment, becomes the hair bulb. Thus, it is evident that the bulb

is coloured; that its pigment is formed far below the limits of the supposed secreting organs of colour, the bulb of the hair being seated in the subcutaneous adipose tissue; and that this pigment is formed without the intervention of any such secreting apparatus as that described by the French authors.

We are therefore disposed to hesitate before we admit the existence of the colorific apparatus of MM. Breschet and Roussel de Vauzème, and to ascribe the secretion of the colouring matter of the skin to the vessels of the external surface of the whole dermis.

It will have been seen that the rete mucosum is only the internal portion of the epidermis. The epidermis is secreted fluid, and this fluid is identical in its composition with its hardest portions. It becomes solid gradually, and in proportion as it is separated, layer after layer, from its origin. The scarios wings of butterflies are but mucous points in the chrysalis; and it is the passage from the fluid to the solid state which has been considered in man as a peculiar substance, or the rete mucosum; but this rete does not exist independently; it is but the expression of the transition state, and the form which the substance receives from the inequalities of the dermis. MM. Breschet and Roussel de Vauzème compare the rete mucosum in its relations with the epidermis to recently melted wax, one half of which is liquified by heat, the other condensed by the external cold.

The theory which the French authors have offered of the cause of the colours of the skin is founded on the existence of the small corpuscles, the formation of which they have attributed to a special apparatus. Gurlt states his inability to detect these bodies within the secreting parenchyma which has been described, but he does not say whether he was able to see them external to the dermis. He speaks of the granular texture of the inner part of the dermis. May not this be the same as that which is spoken of by the French authors as consisting of small scaly corpuscles? There are other opinions in favour of the existence of such bodies. We have already noticed the small polished laminæ described by G. Cuvier and Valenciennes beneath the scales of some fish. MM. Breschet and Roussel de Vauzème remark, that, if the skin is black or white, the free border of the scales is coloured black or white. The pedicle of the scale and the cellular woof in which it is inserted are always of a white colour; as well as every part which enters accidentally into the composition of the epidermis: the scales are therefore the only seat of the colouring matter. They compared this structure with the wings of the lepidoptera, which are an epidermic secretion. The scales of butterflies, coloured and pediculated, are implanted in a species of central moulding, from which it is considered a fair inference that the fine plexus to which the scales of the human skin adhere is also a basis containing the canals proper to the scales, which is evident in the whale. The French authors found that the rich and varied colourings of flowers were

the result of a chequer-work of small utricles of different forms and colours according to the species; and, as far as a comparison may be drawn between the animal and vegetable kingdoms, they suppose that the seat and mode of coloration are analogous in both. They imagine that the form of the scale, or utricule, may have some influence in the production of the colour; that the connexion of the pedicle of the scale with its secreting organ is a medium through which it is nourished by a fluid circulation. The differences of colour of particular races, they suppose to be dependent on the different forms of their scales, and that there is no necessity to attribute it to the influence of the sun, which, although it may more or less tan the skin, has not the power to change the primitive type of animals. But, as this arrangement of little scales could only constitute difference of form, it is always necessary to admit some peculiar colouring matter, the supposed organ of which has been described. The dermis is white, or is only coloured beneath by the vascular network which has been mentioned. All the organs which arise from it are colourless; but, at the limit of the secreting tissue, the production of colouring matter is seen, and coloured globules have been observed in what are deemed the excretory canals of this tissue. Thus, a peculiar modification of the mucous substance takes place in this glandular parenchyma, consisting in the addition of a colouring matter of various characters, showing that the mucous and colouring principles are distinct, although never isolated from one another when constituting the epidermis.

(It appears sufficiently probable, that, inasmuch as the colours of the skin are said to depend on the presence of certain corpuscles, there is reason in this theory. Much, however, respecting the nature of these scales is purely hypothetical, and we have already stated our doubts as to the existence of the supposed colorific apparatus.)

From what has been said of the structure of the epidermis, it is evident that it is not an inorganic substance; it is, on the contrary, a tissue of a somewhat complex organization, connected with the important functions of exhalation and absorption by the faculty of allowing the passage of liquids: but its vitality would appear to be on a par with that of vegetables. The absence of nerves proper to it renders it insensible; it is coloured, exhales and absorbs in the manner of vegetables.

In another part of their work, the French authors say that the epidermis appears to become organized like false membranes: but false membranes are more highly organized than vegetable matter. The doubts which exist as to the nature of the vessels in the epidermis termed inhalents leave still room for question as to the degree of vitality and organization of this tissue.

The sebaceous glands and hair follicles are minutely described by

Gurlt. He has been more successful than both Gaultier and Weber in examining these organs. The former stated that the neck of many hairs was surrounded by glands. The latter speaks of them as consisting of acini, and mentions his having seen in two instances a hair, the root of which projected beyond the divisions of the gland, so that it was situated in the cellular tissue beneath the skin. (*Archiv. von Meckel*, 1827.) M. Gurlt, who has been more successful in his mode of examination, thus describes them.

They are processes of the epidermis penetrating the dermis. The glands and follicles are usually united; at least, where there are hairs there are always glands; but there are sometimes glands where there are no hairs, and, in the palms and soles of carnivorous animals, both are wanting. The sebaceous glands (Pl. II. Fig. 2, *g*.) lie very superficially in the dermis; and in this they are distinguished from both the hair follicles and sudorific glands, both of which always penetrate the lowermost layers of the dermis, and often project beyond them. The sebaceous glands vary in form and size in the same animal, and there are many varieties of them in different animals. They are generally oval, consisting of small acini, which are transparent when they do not contain fat. They generally resemble clusters of conglomerate glands, and are consequently improperly termed follicles. The excretory ducts of the glandular acini either unite so as to constitute a single duct, (Pl. II. Fig. 2, *h*.) opening in the capillary pores, (as is the case with the smaller glands;) or several ducts, frequently from four to six, enter together into one pore. Where, however, the sebaceous glands exist, where there are no hairs, as in the prepuce and glans, then the common excretory duct opens immediately on the cuticle. Two glands are commonly connected with one capillary pore, and one is always found. They are larger where the hair is thicker than where it is thin. They are larger in the hair of the head in man than in the hairy coat of animals. The sebaceous glands are discoverable with the naked eye on the cut surface of recent skin, near the junction with the epidermis, and resemble white granules. In order to examine them with the microscope, a thin lamina of the dermis must be cut in the direction of the hairs; since, where they have a sloping direction, a perpendicular section of the skin must cut through both the glands and the hairs. If the separated lamina is not thin enough, a moderate degree of pressure makes the glands more perceptible, by pressing out the fat: in doing this a little water must be added, to prevent the lamina from sticking to the glass or being torn.

The hair follicles (Pl. II. Fig. 2, *f*.) are by some termed hair-bulbs, but this term is only applicable to the enlarged portion of the hair itself, (Pl. II. Fig. 2, *d*;) the whole hair being divisible into this, the shaft and the point. These follicles are produced by the dipping down of the epidermis, as can be proved in the slightly

macerated skin of the fœtus, by a careful separation of the epidermis from the cutis. In this case, we see the hair follicle remain on the under surface of the epidermis, with its rudimental hair enclosed; but, if the hair is somewhat more grown, then we find the follicle commonly torn, as always happens in the case of the perspiratory ducts. The follicle is evident at its lowest shut extremity where it enters the dermis; it becomes narrower as it penetrates the epidermis, and so closely encloses the hair when it has passed through this, that it seems to be united with and lost in it. But this is not the case; since, if we press the sebaceous matter from the glands into a capillary follicle, we find it escape along the hair on the free surface of the epidermis. By using a great magnifying power, we can discover in the bulbs of the hair thin fibrils, which are not unlike the capillary rootlets of plants, and which probably absorb nourishment from the parts into which they are implanted. The office of the hair follicle is evidently the formation of the hair, just as the capsule forms the tooth: it receives the fat secreted by the sebaceous glands, and conveys this along the hair to the cuticle, at the same time oiling both.

The analogy which is here drawn between the formation of a tooth from its capsule, and the hair from its follicle, must be taken with some limitation; since, in the former case, the secretion takes place from the whole surface of the capsule; whereas, in the latter, as M. Wendt remarks, the growth of the hair is from the bottom of the follicle; and, in the fœtus, the rudimental hair lies loose in its sheath, which it does not entirely fill, the course of the nutritive vessel being towards the bottom of the sack.

On the subject of the Pathology of the Skin the French authors have said but little, and that little is purely speculative. They, however, purpose to make it an object of enquiry; and, if founded on a correct anatomy, we may trust that the many difficulties, both of diagnosis and treatment, which, notwithstanding all that has been hitherto effected, still encumber this subject, will be in a great measure removed.

The amount of information which we can satisfactorily derive from the works of which we have now completed the notice, although valuable, is considerably less extensive than their pretensions. It would appear that the descriptions which are given of the organs of perspiration, of the sebaceous glands and hair follicles, and of the identity of composition of all parts of the epidermis, may be depended on. But there is reason to doubt whether a somewhat too limited view has not been taken of the structure and functions of the cutaneous papillæ; whether any organs exist to which are exclusively appropriated the secretion of epidermis and its colouring matter; and whether a correct function has been ascribed to certain vessels within the epidermis. With regard also to the degree of organization of this tissue, there is still ground for question. The impression produced by a first perusal of the essay

of MM. Breschet and Roussel de Vauzème is, that they are indebted to their imagination for some of their facts; and a more careful examination has but confirmed this suspicion. We may express a hope that, endowed as they are with the faculty of minute and persevering observation, a similar remark may not be applicable to their promised investigations of mucous membranes. There has been less of the search after novelties in the works of the German authors; their investigations having been chiefly directed to the structure of parts, the existence of which had been previously ascertained.

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#### ART. VII.

*Illustrations of the Elementary Forms of Disease.* By ROBERT CARSWELL, M.D., Professor of Pathological Anatomy in the University of London, &c. Fasciculus IX. and X.—London, 1836. Fol. Pp. 34. Eight Plates.

THESE two numbers of Dr. Carswell's classical work are devoted to Hypertrophy and Atrophy. The application of the term Hypertrophy (one of comparatively recent introduction,) has by no means been limited to the class of changes to which it was at first applied, such as to increased thickness of the walls of the heart, &c. M. Andral, for instance, regards the grey or semitransparent striæ of cancer, or the dead white substance of encephaloid tumours, as depending on a change similar to that by which the muscles of the arm increase by exercise; the one being hypertrophy of the cellular membrane, the other hypertrophy of the muscular tissue. He thus classes together two changes of the most opposite character, except in one particular, the appearance of the parts on dissection. No practical deductions could be drawn from this arrangement, even if mischief did not arise from it; and this alone warrants the suspicion that it is an instance of hasty generalization. The error has arisen from not keeping in view the necessity of regarding all morbid changes in connexion with their symptoms. "One of the advantages," says Dr. Baillie, "arising from the more attentive examination of morbid structure is, that we shall be able to distinguish between changes which may have some considerable resemblance to each other, and which have been generally confounded. This will ultimately lead to a more attentive observation of symptoms while diseased actions are taking place, and be the means of distinguishing more accurately diseases. When this has been done, it will be more likely to produce a successful enquiry after a proper method of treatment." An exclusive attention to appearances alone, without regarding the history of the disease, lead M. Andral to confound together diseases which should be divided, and he has consequently missed the end to which every branch of medicine should tend, the cure of disease.

Dr. Carswell has taken a more philosophical view of the question, and, from an examination of the causes of those forms of hypertrophy which are the best defined, he has reduced it to more narrow limits, by showing that it should be regarded as a physiological act. The grounds of his conclusion are, that hypertrophy, or an increase of the healthy structure of an organ, depends on an increase of its healthy function: the muscular arms of the blacksmith and the legs of the opera dancer prove this, as well as the increased size of the muscular fibres of the bladder, heart, &c., after they have had for a length of time to overcome some mechanical obstacle to the free passage of their contents. For increased function a larger supply of blood is necessary, which is proved by the enlarged state of the vessels. Thus, when one kidney is wasted, and the other proportionably enlarged, its vessels undergo a corresponding increase in size. Hypertrophy is therefore a condition precisely similar to that required for the general increase of the whole body; and it is fallacious to suppose that a healthy act can lay the foundation for a product, like carcinoma, altogether foreign to the constitution. This limitation of hypertrophy to a physiological act, which only becomes pathological when it interferes with the due performance of an organ, appears to be unobjectionable; and the practical advantage resulting from it is, that it involves the principle on which the successful treatment of hypertrophy is founded.

Dr. Carswell classes the varieties of hypertrophy according to their probable causes. These are either general or local. The most remarkable of the former seems to consist in a predisposition or peculiar organization of the individual, by which nutrition in general is so modified as to give rise to an increased but imperfect development of some tissues or organs. Such is the case in scrofulous persons, in whom the liver, bones, lymphatic glands, sometimes the brain, the upper lip, &c., are enlarged. The excessive deposition of fat is another instance. The local causes are divided into three. The first cause is the increased action of an organ in the healthy exercise of its function. The most obvious example is in the voluntary muscles, particularly of the limbs, which, though not constituting a pathological condition, cannot exist to a great extent in one region of the body without exercising a marked influence in the development of some other region, according to the law of regular organic development. Thus, the legs of a drayman seem too slender to support his broad chest and brawny shoulders. An important variety consists of great hypertrophy of the heart without any perceptible mechanical obstacle, or local morbid stimulus, that can be traced; the excess of nutrition depending on an increased exercise of the heart, induced, in a manner not satisfactorily explained, by certain diseased states of other organs, particularly of the brain and nervous system, and various affections of the



mind. The second local cause of hypertrophy is a mechanical obstacle to the function of an organ, which includes a large number of well-known instances; as hypertrophy of the heart from diseased valves, of the stomach from contraction of the pylorus, &c. The third cause of hypertrophy is the long-continued influence of a morbid stimulus. This is considered by Dr. Carswell as the most frequent local cause, and is seen in hypertrophy of the mucous, cutaneous, cellular, fibrous, and osseous tissues, and glandular organs, produced by a state of irritation or chronic inflammation.

Dr. C. insists on the necessity of a minute examination, to prevent confounding with true hypertrophy an increase of bulk from the deposition of lymph; and adds, that the physical characters of coagulable lymph effused and organized in the cellular tissue, and on serous membranes, are so similar to the original structures, that in most cases it is impossible to ascertain whether the increase of bulk is owing to hypertrophy or to the presence of an analogous new formation. In the instances which are given, we do not think that Dr. C. has kept within the limits of his definition. No instances can be admitted except those in which chronic inflammation has acted as a stimulus, by which a greater quantity of blood has been attracted to the part. If inflammation has been set up in any organ, and the inflamed part is increased in bulk, that change cannot be attributed to hypertrophy; as the first is a new, a morbid action; and the second is, according to Dr. C., merely an increase of the healthy nutritive function of a part. Wherever, therefore, symptoms of inflammation had existed during life, and, on dissection, a thickened state of the parts is found, we conceive it would be more convenient and correct to distinguish such changes from hypertrophy. The impossibility in many cases, which Dr. C. admits, of distinguishing between organized lymph and the proper tissue shows strongly the value, even in forming a classification, of the opinion of Dr. Baillie, that an examination of diseased changes should lead to an attentive observation of symptoms. But, although we are inclined to think that, in a practical point of view, the more limited application of hypertrophy is the better one, we see at the same time the extreme difficulty of classifying satisfactorily these intermediate cases, particularly in the present imperfect state of our knowledge of pathological anatomy.

There are many instances of hypertrophy in which the operation of any of these causes cannot be satisfactorily established. Such are "accumulation of fat in the form of tumour under the skin, around the kidneys and basis of the heart, and in other parts of the body; the anormal development of the hair of the head and pubis, the epidermis and nails. The *Cutis pendula*, *Dermatolysis*, &c. of authors is a striking example of hypertrophy of the skin, the cause of which is unknown. It is characterized not so much by an increase of thickness as by great extension of the skin, which is

thrown into folds, sometimes several inches in breadth, which, when grouped together, form large pendulous masses: it occurs chiefly in the skin of the upper part of the face, chest, and abdomen. We give an instance of this affection in the Third Part of the present Number, which is still more curious from being hereditary. Of this kind is also the following remarkable instance of dilatation of the lymphatics: it is illustrated by an admirable drawing.

"My friend, M. Amussat, of Paris, was called to a young man, (æt. 26,) who the day before had been seized with severe pain in the abdomen, followed by frequent vomiting. These symptoms, and the presence of two swellings, one in each groin, nearly as large as an orange, left no doubt that the patient was labouring under the effects of strangulated hernia; but the state of prostration was such, that reduction by an operation, was not attempted. On examining the patient after death, the only remarkable circumstance observed was enormous dilatation of the lymphatics from both groins upwards, including the thoracic duct. The two swellings situated in the groins, and which, at an early age of the patient, had been treated as a case of *double herniæ*, (for we afterwards learned that he had worn a double truss from his boyhood,) were found to be produced by great dilatation of the lymphatics of the inguinal glands. When cut into, instead of having a compact structure, they presented the appearance of a coarse sponge, from the size of all these vessels being increased; the most of them presenting from one to three lines in diameter. All the lymphatics of the pelvic and lumbar regions presented the same alteration in a still more remarkable degree. None of them were less than two, many of them from three to four lines; and the thoracic duct was from six to eight lines in diameter. As no obstacle was found in the course or at the termination of the thoracic duct, to account for the dilatation of the lymphatics in this singular case, and as these vessels had undergone no other perceptible change, I am disposed to consider it as an example of malformation of these vessels, more especially when these facts are connected with the circumstance furnished by the history of the case,—viz. the existence, at an early period of life, of the enlarged state of the inguinal glands." (Fasc. ix.)

What has been called concentric hypertrophy is an example of the necessity of our having a previous knowledge of the causes in which it originates in individual cases, in order to form a correct estimate of its nature. This depends on arrested or imperfect development, in consequence of which the organ retains after birth the proportions of bulk which were necessary to carry on the foetal circulation.

"The thickness of the walls, compared with the capacity of the ventricles of the heart in the foetus, is nearly twice that of the walls compared with the capacity of this organ in the adult. This relative disproportion between the walls and cavities of the foetal heart is conspicuous in infancy and childhood; but, during the regular development of the body, it gradually merges into those proportions of capacity and bulk which are regarded as indicating, in these respects, the normal state of the heart. If, therefore, the changes which should take place in the regular deve-

lopment of the heart after birth are prevented, it is obvious that the permanence of the state of the foetal heart which we have described must, under new and so very different conditions of life, constitute a pathological state, a state of concentric hypertrophy, and give rise at an early period to those derangements of function which follow as the consequences of this disease; and that such is the origin of some cases of this form of hypertrophy is proved by a careful examination of their early history, and of the organ itself after death. . . . The persistence after death of the foetal state of the liver, as to the greater size of the left lobe, is occasionally met with, and might possibly interfere with the process of digestion; and the thymus gland has been found to retain for a considerable time after birth its original dimensions, and to give rise to distressing and even fatal consequences." (Fasc. ix.)

Dr. Carswell's observations on the formation of circumscribed aneurism of the heart, besides their originality, possess considerable interest at the present time, as attention is becoming generally directed to diseases of the internal linings of the cavities coincident with pericarditis.\* He is satisfied that the formation of circumscribed aneurism of the heart is a process similar to that of aneurism of vessels. The first perceptible lesion is in the serous membrane lining the internal surface of the ventricle, which within a circumscribed space is of a pale straw colour, opaque, and closely united to the cellular tissue beneath it, which is thickened: occupying the situation of these changes are one or more depressions, cavities, or sacs, lined by serous membrane, whose power of resistance being impaired by disease, appears as if it had been pushed outwards by the contraction of the heart on its contents, carrying before it and producing atrophy of the muscular coat; the only change which it suffers. In the cases where there had been uniform dilatation of the ventricle, the opposite sides of the pericardium were intimately united by firm cellular tissue, the consequence of a previous attack of pericarditis. The same changes were observed in the serous lining and sub-cellular tissue; and there was also a greater or less quantity of cellulo-fibrous tissue occupying the situation of the muscular substance of the ventricle. This does not originate in coagulable lymph; for Dr. C. has distinctly traced it to the separation of fibrine from blood forced into the substance of the heart, in consequence of softening and rupture of some of its muscular fibres.

Dr. Carswell concludes this fasciculus with a general sketch of the physical characters of hypertrophy.

Atrophy is the subject of the tenth fasciculus, and is regarded as depending on an opposite condition to that of hypertrophy, or a diminished exercise of the nutritive function.

The changes gradually produced in the various tissues of the body by the progress of time are ably and clearly explained. The

\* See our Review of Bouillaud's work in the present Number.

local forms of atrophy, which in general are permanent pathological conditions, are referred to three heads.

1. Atrophy from a diminished supply of blood. This is one of the most obvious causes, and is seen when an artery supplying an organ is obstructed, and its office is not supplied by the collateral circulation. Thus, atrophy of the brain sometimes follows ossification of the carotid and vertebral arteries within the cranium; and the same change is not unfrequently seen in the inferior extremities from this and other diseased states which interrupt the circulation of the blood through the larger arteries of these parts. Compression of the capillary vessels is a frequent cause of this form of atrophy.

"The stunted growth of some parts of the body, as the feet in some women, and the diminished dimensions of the inferior diameter of the cavity of the thorax in others, is partly produced by compression, so applied as to reduce the quantity of blood usually transmitted through the capillary vessels of these parts; although in both cases the comparative state of inactivity in which the muscles are placed by this cause contributes greatly to the same effect. The liver, in some old women who employ a string or cord to fix their petticoats around the waist, presents on its convex surface a transverse fissure, which is sometimes from half an inch to an inch in depth." (Fasc. x.)

Compression by accidental products is another cause of atrophy. The formation of serous cysts in the kidneys is the most frequent cause of atrophy of these organs, which is often followed by partial or total suppression of urine.

In the majority of cases of insanity which terminate in general paralysis, there is a greater or less accumulation of serosity in the cavity of the arachnoid and in the pia mater between the convolutions of the brain with various degrees of atrophy of that organ, more especially of the grey substance. The presence and extent of the effusion are readily recognized by the colour of the membranes covering it, which present the appearance of irregular, milk-white patches; they are thickened, and in general united together so as to form a sac for the effusion. On removing the membrane, irregular depressions are perceived between the convolutions, which are variously reduced in bulk. It is a matter of doubt whether the atrophy of the brain is produced by chronic irritation, and the serum is effused to supply its place; or whether the atrophy is the consequence of the compression produced by the serum effused by the diseased membranes. The evidence of chronic inflammation of the membranes render the latter supposition the most plausible, but Dr. Carswell believes that it is more than probable that the diseased state of the membranes depends on some change in the functions of the convolutions.

After explaining the mode in which emphysema of the lungs produces atrophy of these organs, Dr. Carswell dwells for some time on an important form of atrophy produced by the compression

of a contractile fibrous tissue which is sometimes formed upon the surface of some organs and within others. We shall not regret that our space will not allow us to give more than an outline of Dr. Carswell's remarks, if, by so doing, we shall direct attention to the fasciculus itself, which is full of valuable matter. In chronic pleurisy the lung is at first compressed by effused fluids; and, if these are removed, it regains its size: but it frequently happens that the coagulable lymph which the effusion contained becomes organized, and forms a strong fibrous membrane over the lung, retaining it in its position; and, in proportion as it acquires its fibrous character, it contracts and still further compresses and diminishes the lung; in an extreme case, the greater number of the bronchi and blood-vessels are obliterated and diminished, the pulmonary is replaced by cellular tissue, and the whole enclosed in a dense fibrous capsule, from an eighth to a quarter of an inch thick. That this atrophy is the effect of compression by the fibrous tissue is proved by one lobe occasionally becoming atrophied in this manner, or appearing as if strangulated by a zone of this tissue. The abdominal viscera are sometimes similarly compressed by a fibrous membrane formed on the peritoneal covering of the viscera, after chronic peritonitis.

"The intestines are often found much reduced in capacity, grouped together into a comparatively small mass, and firmly fixed down to the spine; the stomach and urinary bladder are flattened and compressed against the surfaces with which they are in contact; the gall-bladder is contracted and nearly empty; even the liver and kidneys in some cases appear to have undergone a diminution of bulk, and the spleen in general is very small." (Fasc. x.)

Dr. Carswell attributes to the same cause contraction of the œsophagus succeeding ulceration, and stricture of the intestines following the ulceration of Peyer's glands, in both of which instances the muscular coat is partially involved. He makes no mention of the contractions of the skin from burns, which are certainly analogous to contraction after ulcers of mucous membranes. In these cases a new membrane, having strongly contractile powers, is formed.

That peculiar disease of the liver called by Laennec "*Cirrhose*" is considered by Dr. C. to be an example of atrophy produced by the compression of a fibrous membrane. In this disease the liver is sometimes reduced to one fourth its natural bulk, and its density is increased;

"It appears shrunk, and has an irregularly rounded form, particularly at its edges; and the whole of its external surface is raised into round, flat projections, varying from the size of a hempseed to that of a pea, or even a small cherry. Examined more narrowly, the round flat projections are found to be composed of several smaller ones, and these, again, of the individual lobules of the liver; so that the larger projections are

formed of aggregated groups of lobules, each separated the one from the other by cellulo-fibrous or fibrous tissue. . . . When the structure has been exposed by incision, the cut surface presents the same tuberiform arrangement seen on the external surface, the lobules being grouped into smaller or larger masses, mostly of a round, ovoid, or pyriform shape. The cellulo-fibrous or fibrous tissue now forms a conspicuous feature in the disease, both on account of its greater quantity compared with that of the lobular structure of the liver, and the contrast of its white or grey colour with the rusty, yellowish, or greenish-brown colour of the lobules." (Fasc. x.)

To those who are acquainted with Mr. Kiernan's description of Glisson's capsule, which he has traced and minutely described as forming a sheath to the vessels and investing each of the lobules, the explanation given by Dr. Carswell of this disease will be both satisfactory and easily understood. He supposes that it is converted into a fibrous tissue which produces atrophy of the lobules by compressing them. The tuberiform appearance of the external surface is owing to the fibrous tissue which is attached to the peritoneal covering, pulling that membrane inwards all around the groups of lobules. Laennec attributed the disease to the deposition of a new tissue of a rust-brown colour, on which account he called it "Cirrhose." If, however, Dr. Carswell is correct, instead of the formation of a new tissue, it consists of an opposite condition,—a state of atrophy of the lobules. The plates give a clear idea of this disease, which has been much mystified by Laennec's name, and by its being sometimes called tubercular liver; a term which Dr. Carswell has very properly changed to "tuberiform." We believe it is this state of liver which is often called "gin liver," in this country, and "whiskey liver" in Ireland, from the belief that it is produced by distilled spirits. The nature of this affection, says Dr. C., explains the occurrence of ascites, its constant attendant. At the commencement of the disease, when the quantity of fibrous tissue is small, the effusion is inconsiderable; whereas, at a later period, when this tissue has increased, and by its contraction opposed a greater obstacle to the return of the blood from the viscera, it is often very great.

2. The second local cause of atrophy is a diminished supply of nervous influence. It is difficult to say, in paralysis, whether atrophy is owing to this cause or inactivity of the part; but, even in this case, the atrophy is generally greater than could be explained by mere diminished muscular action. It is still more satisfactorily shown in the great extent of wasting of a limb after injuries which interrupt the function of the principal nerve. Atrophy of the arm from compression of the brachial plexus in luxation of the head of the humerus is an example. Dr. Carswell also thinks that the atrophy which accompanies painter's colic, and some of the worst forms of what is called dyspepsia, in highly nervous, hysterical, and hypochondriacal individuals, is, at least in part, the consequence of

the same morbid condition of the nerves which gives rise to the diseases, and which, acting on the capillaries, either retards the circulation of blood through them, or prevents it from undergoing those changes necessary to nutrition. With these views of Dr. Carswell's we are disposed to agree, as they explain on correct physiological principles the possibility of atrophy without any appreciable organic disease of the chylopoietic organs. The temporary atrophy, which is not an uncommon symptom among hypochondriacs, who often get thin and stout in the course of a few days, or even less, is thus explained by a temporary disturbance of the functions of the nervous system. Some cases have been recently reported in which dissection proved that atrophy may alone depend on disease of the spinal marrow. Whytt, who described a nervous atrophy as a symptom of hypochondriasis, attributed the wasting frequently to an "unnatural or morbid state of the nerves of the stomach and intestines." His reasons for this opinion are so judicious that we shall make no apology for giving them.

"The influence of the stomach in the animal economy is greater than is perhaps generally imagined. It not only contributes to the digestion of the aliment, but the whole system is either invigorated or affected with a languor, according to the different disposition of its nerves. By proper food, the nerves of the stomach are gratefully stimulated, and the whole body is thus enlivened and strengthened; so that, besides its use for nutrition, food in the stomach becomes, on account of its *stimulus*, altogether necessary, in some delicate nervous people, for keeping up the strength of the body and the due exercise of all its functions: and hence it is that such persons become often faintish as soon as the greatest part of the food has passed into the intestines; that strong broths, though they may afford as much or more nourishment than some kinds of solid meat, yet do not satisfy the stomach, at least for any considerable time, or enable us to endure much labour; and that, according to the different dispositions of the nerves of the stomach, different stimulants are most grateful to it, and most invigorating to the body. We know that an unnatural state of the nerves of the stomach may either produce a craving or an aversion to food; that low spirits and melancholy often proceed from that cause; nor is it to be doubted that, when the nerves of the stomach are, from certain causes, affected in a manner somewhat different, an indifference for food, a weak digestion, a languor and coldness, a slow pulse and wasting, may be the consequences. The morbid affection of the nerves of the stomach, by sympathy, impairs the vigour and energy of the whole system: whence the motion of the heart and the circulation of the blood will become slower and more languid, the body will be deprived of its natural heat, and be affected with a general weakness. The patient decays daily, though exhausted by no excessive evacuations, because his food is not converted into good chyle; and the nutritious fluid in the blood either does not possess its usual properties, or, on account of the languid manner in which all the operations of the body go on, is not applied to the several parts in such a way as to repair the waste they daily suffer. Further, the watching or want of refreshing rest, and low spirits or melancholy, which generally

accompany this disease, may contribute to prevent the proper nutrition of the body."\*

3. The third local cause of atrophy is the diminished exercise of the function of an organ. This is most striking in the muscles of voluntary motion, but those of involuntary motion are also subject to it. Thus in artificial anus, the muscular coat of the intestines below the opening is reduced to a thin transparent membrane. Laennec relates the case of a woman of fifty, who died of cholera two years after she was cured of hypertrophy of the heart by the treatment of Valsalva, whose heart was found of the size of that of a child twelve years old, looking externally like a withered apple, the wrinkles running longitudinally. Compression of the larger bronchial tubes by enlarged tubercular glands may produce atrophy of the corresponding lung. Dr. Carswell has given a drawing which beautifully illustrates this. A mass of tuberculated glands had compressed the left division of the trachea of a monkey, and, in consequence, the left lung was reduced to nearly one-fourth the size of the other. There was no effusion in the chest, but the parietes of the left side had become depressed as in chronic pleurisy. Atrophy of the mammæ in females who have ceased to menstruate, and the imperfect state of the testicles of those who have spent their youth "under the humiliating and blighting influence of certain monastic vows," come under this head. In this classification of causes, Dr. Carswell has followed Andral. The French pathologist also enumerates "irritation," which we think Dr. Carswell has acted judiciously in omitting, as atrophy from this cause evidently depends on a diseased action, and not merely on a decrease of the healthy nutritive function. The symptoms prove this; for, in atrophy of the breast which sometimes succeeds enlargement of the organ, there is often much local uneasiness.

We cannot sufficiently recommend this work to the attention of our readers, more especially to those among our younger brethren, who, having left the schools, are just entering on the practice, and (as we would fain hope) the *practical study*, of their profession. In Dr. Carswell they will find an enlightened guide to the exact knowledge of organic diseases, and one whom they may trust with the most undoubting confidence. One of the grand charms to us in the writings of Dr. C. is, that they are evidently the productions of a thoroughly *honest* enquirer: he may be wrong, and no doubt he occasionally is wrong; but the reader may always feel assured that the author believes himself to be right, and that he has taken all possible pains to be so.

The illustrations both of Hypertrophy and Atrophy are numerous, and are, like those which preceded them, no less admirable for their pathological truth, than for their pictorial beauty.

\* The works of R. Whytt, M.D. Quarto. P. 600.



## ART. VIII.

*Rapport et Discussions à l'Académie Royale de Médecine sur la Taille et la Lithotritie, &c.*—8vo. Paris, 1835.

*Report and Discussion at the Royal Academy of Medicine, on Lithotomy and Lithotrity, &c.*

UNTIL very recently, the provinces in this country were almost entirely deprived of scientific meetings for the purpose of discussing medical topics; and, in the metropolis and large towns, where such meetings are held, the most eminent persons, whether physicians or surgeons, seldom attend to take a part in the proceedings. It is otherwise in France, where a degree of natural vivacity and a strong disposition to be sociable conspire to bring gentlemen of our calling into strong collision in debate; whilst courtesy restrains the warmth of argument within the rules of moderation, and secures its being maintained in proper language.

Of the several medical societies of Paris, the "Royal Academy of Medicine" is the most attractive and the best supported; and, as often as any interesting subject is announced for discussion, the most renowned of the profession meet and take part in the proceedings, with all the weight of their years, experience, and eloquence. The pamphlet, of which the title is above prefixed, fully bears out these remarks: it contains the verbatim report of a discussion, prolonged through several sittings of the Academy, and arising out of a "Memoir upon Lithontripsy in Children," furnished by M. Leroy.

In this memoir the author has adduced five instances of the lithontriptic operation upon children under six years of age, in one of which a single sitting sufficed to effect a cure; the others required several trials, ending in the cure of two of the little patients, whilst one was left doubtful as to a portion of stone still remaining, and the fourth was freed from his disease by lithotomy.

MM. Sanson and Velpeau were appointed to *report* upon the memoir of M. Leroy, and they allowed him to have shewn the possibility of performing lithontripsy upon children at the tenderest age, without, however, proving its utility or its preference to lithotomy.

"This method of breaking down the stone deserves infinitely less commendation than is now generally accorded it; on the one hand, the dangers of lithotomy are represented in the strongest light, on the other the security of lithotrity is greatly exaggerated; and as often as an attempt is made to compare the two operations together, care is taken to avoid considering them under analogous circumstances."

Indulging in such remarks as these, the reporters upon the original memoir open the field for discussion. Hostilities once proclaimed, a regular assault and battery ensue, and, after much

heavy cannonading on both sides, victory is awarded to neither, and Truth puts in a claim for more time and experience to settle finally the question in debate.

M. Amussat takes the lead in defence of the *new method*.

"Whence (he enquires) arises the aversion of some surgeons to lithotrity? in the first place, because it demands so much study and care; it is an entirely new art for them to learn; much practice, and a sort of love for the operation, are required for success; and it is moreover less brilliant than the old method by cutting. But the surgeon's aim should be to cure, not to make a display: for my own part I am never more satisfied than when I have either broken down a calculus which others would have removed by lithotomy, or reduced a hernia for which an operation had been proposed." (P. 17.)

This orator adds, that one great argument in favour of lithotrity is, that all medical men afflicted with stone in the bladder have of late years had recourse to it; whilst none have had reason to repent of their choice. M. Lisfranc confirms the justice of this remark by his own experience, and sums up a short speech by affirming that "lithotrity ought to be the general rule, and lithotomy the exception."

It is soon found out by M. Velpeau, that there is more assertion than proof in these speeches of the partisans of lithotrity: he calls for statistical details to argue upon, and (after receiving the assisting testimony of M. Sanson, that, "of the lithotomized in Paris, at least four out of five recover,") contrasts the two methods of operating in the following manner; the only difference in the translation we offer being the omission of some repetitions, and the correction of some small errors which we have found in the original text.

"1. M. Civiale, according to a fourth statistical table of his operations, recently published, cured 18 out of 30 by lithotrity, 4 of the remaining 12 retaining a stone in the bladder, and 8 dying;—a brilliant result truly! and what would it be, if we were to examine the success of lithotrity in the provinces, where operators have not the dexterity of those in the metropolis?

"2. Out of 1200 patients lithotomized at l'Hôtel Dieu and la Charité at Paris, there are reckoned 945 cures and 255 deaths. Saucerotte of Luneville obtained much more remarkable success, curing 1482 out of 1629. Dupuytren lost 61 out of 366. At the Leeds Hospital, of 197 operations, 28 proved fatal. Cheselden lost 24 out of 213 operated, and Frère Côme 19 out of 100. Under Souberbielle, 17 died out of 133. Dupuytren cut 70 patients by the bilateral method, and lost only 6. Crosse has given a very exact table of 704 operations for stone at the Norwich Hospital, of which 93 only were followed by death. Of 401 cases of lithotomy at Naples, in the last few years, 60 deaths are recorded. Pajola lost 5 in 50, Pansa 5 in 70, Ouvrard 5 in 60, Viricel 3 in 83, Martineau 2 in 83 in his own practice, and Dudley 1 in 72. Putting out of the question these last, which present results so extraordinarily

fortunate, we find the following to be the proportion of fatal cases, viz. with Frère Côme, one of the most unsuccessful operators, one case in 5 fatal, with Souberbielle 1 in 6, Cheselden 1 in 9, Dupuytren by the bilateral method 1 in 12. Many other distinguished surgeons, who have not given an exact table of their operations, assert that they have obtained even greater success. Professor Smith, of America, estimates his losses as 1 in 18; Chelius in Germany as 1 in 22; Petrunti at Naples as 1 in 25 in private practice; and Santaro states that he has lost only one patient out of 56. It will surely be allowed that these statistical reports are worth more than those furnished by the lithotritors." (P. 23.)

M. Velpeau allows, notwithstanding, that lithotrity is a fortunate triumph of art over human infirmities, if kept within proper limits; but, when its too-ardent advocates represent it as being not more dangerous than passing a catheter, and as unattended by accidents, he puts some very puzzling questions.

"Do you reckon for nothing," (he says,) "those affections of the nervous system which prove fatal? or those sequels of an inflammatory kind, also proving fatal, as inflammation of the bladder, of the prostate gland, of the peritoneum, phlebitis, retention of urine, laceration of the urethra, and pains of almost every kind occasionally produced by this operation? The public are deluded by the promise that no pain shall be produced, whereas lithotrity in reality causes more pain than lithotomy. It is absolutely necessary that this extravagant enthusiasm should cool a little, and that lithotrity should be restrained within its proper and legitimate boundaries." (P. 25.)

The venerable Baron Larrey is present,—the same who braved Egyptian sands and Russian snows, and now finds the vicissitudes of an animated discussion very trying to his temperament: he censures the lithotritists, to whom he is opposed, for using some expressions not at all *academical*, and for alluding to the prejudices of antiquated members of the profession. We have the person of this veteran surgeon vividly depicted in our memory, and cannot refrain from expressing the wish that he may live long to dignify such meetings by his presence, and receive the respect due to him.

M. Roux states, in reference to his own experience, that one out of five or six adults die after lithotomy, and only one in twenty amongst children; but his calculations are given at a guess, and not based on any regular documents: he soon yields to M. Lisfranc in the debate, who again urges the superiority of lithotrity, upon the grounds of his own choice and experience; at the same time confessing that it cannot be exclusively employed.

With rejoinders from several of the orators already quoted, and some further remarks by M. Sanson, not of sufficient importance to claim a place here, the discussion for the first evening closes.

At the next meeting, M. Souberbielle is the only speaker from whom any remarks of value escape: of 133 patients lithotomized

by him, no less than thirty had previously submitted to a trial of lithotrity; he denies altogether the harmlessness of this method, and the perfection to which it is pretended the operation has been brought as to mechanism.

"The same accidents, which occurred at first, still happen daily, and in the hands of the same surgeons; thus M. Turgot in 1824 found the urethra and the rectum perforated; in 1826 he met with laceration of the former passage, and urinary abscesses; in 1828 M. Le Sénécail found a perforation of the urethra and of the corpus cavernosum; M. Gasselin, a laceration of the same canal and an abscess in the anterior wall of the bladder; the urethra was torn, and urine infiltrated in the case of a certain general; and in the preceding year, in the case of M. Hector Chaussier, the bladder was twice seized, and portions of its mucous membrane brought away by the stone-breaking instrument!" (P. 39.)

Being ourselves no partisans of either method, we are glad to give to our readers, as amply as space and time will allow, the different arguments contained in the little book we have taken up, for their instruction and amusement.

On the third evening of the discussion, M. Lisfranc endeavoured to reduce to a more just estimate the statistical deductions of M. Velpeau in favour of lithotomy; showing that, when females are taken from the list, and children distinguished from adults, the average success in males of the latter class is, in France, one in three or four, and in England (though more satisfactory, according to the published accounts of Smith and Crosse, at the different hospitals of Bristol, Leeds, Norwich,) it never amounts to more than one in six or seven.

"Hence it is evident, (says M. Lisfranc,) that neither is lithotrity so fatal, nor lithotomy so fortunate, as has been asserted; and it may moreover be observed, that, in proportion as lithotrity shall become popular, calculous patients, deterred hitherto through fear of the cutting operation, will more easily seek the advice of the surgeon: thus there will be fewer patients suffering from calculi of large size and of many years' standing; and as it is acknowledged that lithotrity is preferable for small calculi, it will in time become the general method." (P. 49.)

The question is brought to its right bearing by some judicious remarks of M. Amussat, who represents the two methods of operating as not directly opposed to each other, each having its special indications. "We have not to determine generally whether one operation be better than the other, but what cases we should select for the one or the other method." Dividing the calculous cases into two classes, he claims for lithotrity more than his opponents could well spare,—“all cases where the bladder is healthy and the concretion small,” even though there be two or three calculi; and also where the calculus is as big as a nut, if soft and friable; leaving to the lithotomist all patients with large calculi, particularly such as are of a firm consistence, or friable, or filling the bladder, or

complicated with vesical catarrh. We suspect it will be some time before both parties become reconciled to these conditions, convinced as we feel ourselves, by much actual observation, that lithotomy can prove uniformly or generally successful only in cases where the bladder is tolerably healthy and the calculus of moderate size. We confess our great surprise to find any practised operator proclaiming the superiority of lithotomy, by its being applicable to all cases of stone: it can, we grant, be performed in almost all cases, but is it advisable? We know not how it is in France, but in this country a majority of those adults who are affected with stone in the bladder die without being operated on, chiefly from apprehension of the pain or danger attending lithotomy; and, if the operation be indiscriminately performed, the mortality becomes so great as to deter those who ought to undergo it. The road to the lithotritist's success is cleverly marked out by M. Amussat: let the lithotomist exercise as much caution, or ere long he will be seldom called upon, except to undertake the cure of patients in whom lithotrity has been tried and proved ineffectual.

The operation of lithotomy can scarcely undergo any future very considerable changes for the better, as regards the plan and mechanism: lithotrity (a triumphant discovery, it must be confessed,) is in its infancy, and, although greatly over-rated, and falling short in practice in the hands of most surgeons, save those whose attention is almost exclusively devoted to it, may go on improving till it arrive at a degree of success equal to what its warm supporters would persuade us to believe it has already attained, but which is not shown by authentic documents, even in the countries where it is most cultivated, France and Great Britain.

But we return to the discussion, which was adjourned to a fourth sitting, with an increased number of visitors.

M. Lepelletier repeated the doctrine of M. Roux, that "lithotomy is applicable to all calculous patients, without exception: lithotrity, on the contrary, is suited only to a certain proportion, and under favorable conditions." He regards lithotomy as the easier operation, and thinks it no small recommendation of this or any other operation, that it can be well done by most surgeons. The reproach of lithotrity is, that few can perform it with sufficient dexterity to command success; and it is urged, that it ought not to be undertaken where the calculus is situated partly in the urethra or in the ureter, or when adherent to the bladder, or lodged partly in a sac formed by the inner coat of this organ; nor in cases where the calculi are numerous, complicated with disease of the kidneys, of the prostate glands, or of the urethra; nor in cases where the irritability of the patient renders the different manœuvres for breaking up the stone impracticable. According to our ideas, most of these conditions, as where the kidneys, prostate gland, or urethra are diseased, forbid equally the performance of either operation. The

preference of lithotrity must rest upon different arguments from these. In looking prospectively, we cannot be so rash as to limit the degree of dexterity which may be attained, or the perfection of mechanism that may be arrived at; it seems sufficient to state, which we feel bound to do, that the greatest tact and experience are required in the new operation, and that the proportion of patients will increase as surgeons become better qualified to operate on them. We have always felt respect for M. Civiale, on account of the candour he has shown in placing the difficulties of stone-grinding and stone-crushing before the public. There is equal reason to be satisfied with M. Amussat, who uses this strong argument, evincing the improvement of the art:

“At first, when the operation was performed by successive perforations of the stone, I found, amongst the patients who applied to me, about an equal proportion suited to each method; but since the great improvements in the instruments,” (it might also very justly be added, the different plan of performing the operation, the *lithontriptic* method of M. Heurteloup,) “I operate by breaking down the calculus in at least two thirds of my patients, and practise lithotomy more and more rarely.” (P. 117.)

We have thus endeavoured to give a portion of the arguments on both sides: the reader who desires more must peruse the original treatise, which is not less interesting as a specimen of free and able discussion, than as tending to settle the value of one of the best improvements in modern surgery. In conclusion, we will give a part of the eloquent *impromptu* of M. Velpeau, with which the meeting of the Academy closes; a speech breathing the excess of liberalism, yet showing more the native talent than the cool and correct judgment of the speaker.

“Where consists the cruelty of drawing a rigorous comparison between lithotomy and lithotrity? where lies the danger of lithotomy? *in the wound*. And what bad consequences may the inflicting this wound give rise to? it may give rise: 1, to hemorrhage, which is rarely serious; 2, to a wound of the rectum, which is rare and of little importance; 3, to a perforation of the bladder, still more rare; 4, to accidents affecting the nervous system, also very rare; 5, to cystitis, often mortal; 6, to peritonitis, phlebitis, or urinary infiltrations, which are not less formidable; 7, to fistulæ, incontinence, impotence, which may be considered as simple infirmities, from which the patient most commonly recovers; lastly some fragments may remain in the bladder! Here is a chapter of accidents long enough, no doubt; but wait a moment, and you shall see that the lithotritist travels over a path covered with thorns. The dangers of lithotrity result from the necessity of keeping a large and straight instrument in the urethra. It will be answered, perhaps, that the instrument now used is curved; but there is a great mistake on this point. The curvature, being situated at the extremity of the instrument, renders its introduction more easy; but the portion which occupies the urethra is nevertheless quite straight; hence arises compression and violence to the

prostate gland, the membranous portion of the urethra, and about the symphysis of the pubis; hence shocks to the nervous system, to such a degree as to prove fatal, contusions, lacerations, infiltrations; also abscess of the urethra, of the prostate gland, of the scrotum or perinæum; hence sufferings so severe that, although inadvertently designated trifling by M. Amussat, they were aptly compared by one of his patients to the agony attending the extraction of a tooth, the most frightful perhaps that can be borne. But this is not all; severe attacks of fever, dangerous inflammations of the joints, urethritis, phlebitis, hemorrhage, perforation of the bladder or rectum, fistulæ, are also consequences of this *instrumentation*, without taking into the account that cystitis, and inflammation of the ureters and kidneys are more common after lithotrity than after lithotomy. We may further add, retention of urine, peritonitis, instruments broken and which cannot be removed, the suffering and mischief caused by calculous fragments lodging in the urethra, and we shall then have an idea of the *little danger attending lithotrity, that mild and gentle operation!* The public are misled, because the accidents of lithotomy occur either immediately, or so soon after the operation, as not to be separated from it; whilst those of lithotrity arise more gradually, even at a period so remote that both operator and patient believe them foreign to the treatment. Again, lithotomy either kills or cures; but lithotrity often does neither, at the same time that it lays the foundation for insidious mischief, which shews itself in disease so gradually that, without any breach of faith, it is assigned to some other cause. In short, this new operation, which is to a certain extent good, has hitherto been treated as a spoiled child, its advocates concealing all its defects, and setting forth, with too much ostentation, its good qualities: if we let this state of things go on, one abuse will follow another, until, under the support of this kind of nepotism the operation will be ruined, since it is admitted that nepotism answers no better in the end for a surgical operation, than for the success of an individual. The language employed in its favour threatens to throw this operation into the hands of mechanics and adventurers; the means of rescue are, to remove it from the bosom of its parents and family, and to merge it in the circle of general surgery, where, being viewed by broad daylight, the evils which attend it will be separated from the good, and the operation will in due time be estimated at its just value."

Since the foregoing notice was sent to the press, we have received Dr. Civiale's work, entitled "*Parallèle des divers Moyens de Traiter les Calculeux*," which contains a more complete and elaborate review of the arguments in favour of each of the rival methods. We shall give, in an early Number, an account of this valuable treatise, which, we believe, will shortly appear in an English dress from the pen of our own celebrated lithotritist, Mr. Costello.

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## PART SECOND.

**Bibliographical Notices.**

ART. I.—*Lectures on Subjects connected with Clinical Medicine.* By P. M. LATHAM, M.D., Fellow of the Royal College of Physicians, and Physician to St. Bartholomew's Hospital.—London, 1836. 8vo. pp. 322.

THERE is much to approve of both in the design and the execution of these lectures. Dr. Latham is one of several distinguished physicians attached to public hospitals in the metropolis, whom the evident inutility, as far as the pupils were concerned, of being followed round the wards by a crowd of uninstructed youths, to whom, as was the old system, nothing was explained, has induced to assist the learners by clinical lectures on medicine. Until of late years, no department of study was so much neglected as that of theoretical and practical medicine. The young men resorting to London were laudably anxious for anatomical knowledge; they were influenced with much zeal as regarded surgical operations; but medicine formed no part of their plan. Nor was this at all to be wondered at. From the earliest days of their apprenticeship, they had entered on the cure of medical cases without scruple, from pains in the side to the worst forms of fever; but of surgical responsibilities they had imbibed a considerable apprehension. Bleeding and tooth-drawing they had daily performed; but they knew that the more important operations were eschewed in country places, and transferred to the surgeons of the county hospital, whose anatomy had been kept up, and whose hands were exercised. Even after a year or two passed in London, their ideas on these subjects remained unchanged. The accomplished youth returned to his province, and his talk was of Cline, or of Astley Cooper, or of Abernethy,—great men, indeed, and well deserving of his grateful mention; but, of the practice of the hospitals of London in fevers, or in inflammations, or in chronic disorders, no one ever heard a word; for of these things the young surgeon had taken no kind of notice. Yet it is well known that his daily duties, from the very day of his commencing practice, were chiefly medical, and that his life might be passed without his ever being intrusted with a capital operation. If rash and presuming, he proceeded fearlessly to treat disorders of the progress of which he was ignorant, to the no small detriment of his patients; or, if diffident and conscientious, suffered many anxieties for many years. We suspect that much of the blame of this was attributable to the incommunicativeness of the hospital physicians. Surgical diseases almost explained themselves, or were explained by a few striking observations. The medical cases were obscure, and the older physicians are supposed to have set



some store upon obscurity, as enhancing that talent of which they knew the public were ill fitted to judge.

It cannot, therefore, be wondered at that medical practice remained so long imperfect, or that even, at this day, with all the advantage of clinical teachers, the practice of physic should be so singularly unscientific; and that imperfect diagnosis, excessive bleedings, and the extravagant administration of purgative medicines, should be so characteristic of English medicine. A teacher, therefore, who endeavours, as Dr. Latham has done, to suggest to the pupil how to observe and what to observe, does a very essential service to the school to which he belongs.

Dr. Latham has in a particular manner directed attention to the value of symptoms, those more especially which are attained to by auscultation, and he has attempted to simplify the practice of auscultation, with a view to increasing its popularity and its general applicability. As we are convinced that not one student in ten leaves the London schools enabled to avail himself of the uses either of percussion or auscultation, we attach considerable value to this part of Dr. Latham's labours. Practitioners are ever prescribing for the names of diseases. With many of them, every pain is an inflammation, every palpitation a disease of the heart, every form of difficult breathing an asthma or a dropsy; whilst a large proportion of obscure diseases are ascribed on small grounds to some undefined state of the stomach. The debility attendant on fever is, we know, still not unfrequently treated by tonics or stimulants, and numerous organic diseases are derided as nervous, and exasperated by tonics from the mineral kingdom. We speak of things which we daily witness; and the effect on our minds is the growing-up of a belief, to which every year adds strength, that not a few invalids are annually destroyed by mal-practice; for which, if there is no moral excuse, there is unfortunately no legal punishment.

In Dr. Latham's first lecture, we are rather disposed to object that he has said too much in depreciation of the acquirements of a physician or surgeon. It may be true that too much is sometimes said in introductory lectures concerning the variety of accomplishments essential to the practitioner; but this parade, as far as London is concerned, has, we imagine, been very harmless, seldom leading to an inconvenient accumulation of general knowledge. If the pomp and pretence of learning, conjoined with real ignorance, furnished matter of just ridicule to Molière and Le Sage, as Dr. Latham truly enough observes, the coarse and illiterate ignorance of many young men who are licensed as surgeons has materially degraded the profession of physic, and contributed to drive many of the educated classes of the community into the hands of fraudulent quacks, who, to the advantage of a decent general education, adding consummate knowledge of mankind, were enabled to dispense with medical knowledge and honesty. We apprehend, too, from the concluding passages of Dr. Latham's first prelection, that his prejudices lean to the college side of education, and indispose him to the belief that the years now lost at public schools, and in the grammar schools which imitate their faults, might be far more profitably spent, and admit of an acquisition of scientific knowledge not far short of that set forth by certain lecturers as requisite to the efficient study of medicine. A knowledge of chemistry, of botany, and of certain branches of natural philosophy, and an acquaintance with one or two of the modern languages, might easily be acquired by any youth in

his days of school learning and of apprenticeship, and these would prepare him for his professional studies, and allow him to devote his time and mind to them when he began to attend lectures and hospital practice. But he too generally enters on his professional studies ignorant of every modern language but his own, and very imperfectly skilled in that; devoid of science, and only slightly tinged with the Latin grammar. Happily, every year is adding to the resources of country towns with respect to general and scientific education: the effectual reformation of the decayed grammar schools must soon take place, and societies in aid of all liberal knowledge are becoming everywhere instituted.

With the present difficulties in the way of preliminary instruction, we agree with Dr. Latham that the period of medical education is much too short to admit of multifarious studies, and even that such studies interfere with and obstruct the acquirement of indispensable practical knowledge.

Dr. Latham's second lecture is on the subject of Clinical Teaching; which, he truly observes, has been "separated too much from the wards and the bedside, and has deviated into a discussion of abstract pathology and therapeutics." The truth is, that many clinical lectures, falsely so called, are carefully composed in the closet, not suggested in the hospital; and not meant to inform the pupils, but merely to sell. They are an elegant form of advertisement, possessing all the advantages, without the scandal, of certain other advertisements, which point out the proper quarter in which to apply when "men of education and professional skill" are scarce. It is really difficult to conceive an instructive *clinical* lecture fit for publication. We should say of it, as was once said of a political harangue by a great authority, "if it reads well, it was a bad speech." It may be a good lecture, full of interest, full of practical knowledge, abounding with learning, and smartly expressed; but it is not clinical.

There is often, indeed, but small inducement to the lecturer to deliver a strictly clinical lecture. Such a lecture is a commentary on cases; but the cases commented upon must have been seen and watched by the hearers; and Dr. Latham, whose experience as a teacher is considerable, tells us that "five out of six of those who profess to attend the medical practice of this hospital" (St. Bartholomew's,) "never watch a single case of disease through its entire course, during the whole period of their pupilage: I say this," he adds, "with great sorrow, and as a warning to those whose pupilage has yet to begin." We suspect that many of our foreign brethren could form no adequate idea of the degree of carelessness of London students, if unenlightened by this passage of one of their own teachers.

After some highly interesting observations on the views which led him to undertake the office of clinical teacher, or as he aptly terms it, a *demonstrator* of medical facts, Dr. Latham thus details his method.

"You will perceive, then, that with me clinical instruction is, as little as possible, a matter of formal lecture. I will tell you the manner of my proceeding.

"Upon the admission of a patient, my first object is to learn the exact nature of the disease I have to deal with; and this is done by my own observation, and by enquiries to which the patient himself or his friends make answer. This is taking the case.

"Now, in taking the case, I desire always to proceed after a certain method; and, when I am able to pursue that method, all the circumstances which I seek to know

unfold themselves naturally and easily, and then it is a simple, agreeable, and interesting employment.

"But often, very often, I am driven from all pretence of method in taking the case. The poor patient is embarrassed by the novelty of his situation, or he is deaf, or his disease incapacitates him; and he hardly understands your questions, and gives you strange answers. Thus things drop out confusedly one after another, and you must be content to accept them as they come, and join them together as you can. But, upon these terms, taking a case becomes a very irksome disagreeable business.

"In taking the case, however, if I am able, I always proceed thus:—

"The patient being placed before me, I ask him no question until I have learnt every thing worthy of remark which my own eyes can inform me of. His physiology; his complexion, whether florid, pale, or dusky; the general bulk of his body, whether large and full, or spare and wasted; the condition of particular regions, whether swelled or attenuated; and of the surface, whether there be any eruptions or sores upon it, and what is their character; and, lastly, the power of locomotion, whether he have free use of his limbs or not.

"All these are most important particulars, and we ought to make much of them. There can be no doubt concerning them; they are objects of our own observation, and come to us authenticated by the testimony of our own senses. One step securely ascertained leads to another; and from what we see upon the exterior, we obtain a clue for directing our enquiry to the seat and centre of the disease within. If locomotion be hindered, we look well to the brain and spinal marrow; if there be the livid lip and dusky skin, we scrutinize particularly the condition of the heart and lungs; if the whole body, or some of its parts be attenuated, we examine well the organs of nutrition.

"Having thus learnt all I can with my own eyes, and felt the pulse and seen the tongue, I next proceed, in taking the case, to that further enquiry in which the patient takes a part: and first, I ask him concerning his general sensations, especially whether he be hot or cold; and I endeavour to learn whether his heat or cold occur under conditions which constitute fever.

"Next, I inquire into the state of particular organs, and, beginning with the head, I ask after pain, vertigo, and sense of weight, the sight and the hearing, and sleep and wakefulness. Many of these things are only glanced at, or perhaps passed over altogether, if there be no reason to suspect disease of the brain.

"Then, passing to the chest and respiratory organs, I ask concerning pain, and cough, and expectoration, and the state of the breathing under various conditions of exertion and in different postures of the body; and I learn the force and extent of the heart's pulsation.

"These things are hardly dwelt upon, or soon despatched, if there be no suspicion of disease in the chest, but if there be, not all we can learn by simple enquiry is enough to ascertain its nature. The patient must, moreover, be submitted to the process of auscultation. This process, however, in order to avoid interruption, I postpone until other enquiries are finished.

"Lastly, proceeding to the abdomen, I ask here also concerning pain and uncomfortable sensations—the appetite, the digestion, and the evacuations, their frequency, quantity, and appearance; and then I ascertain with my hand its form and fulness, the possible enlargement of particular viscera, the effusion of fluid, or the existence of pain upon pressure.

"Here the examination of the patient ceases, as to his actual condition; but the history of his complaint remains to be learnt, its origin and progress hitherto, and its probable exciting cause.

"Perhaps it would seem more in the order of nature, and therefore the best method, to take the history first of all. Formerly I used to do so, but I found it practically inconvenient. If you first learn the existing complaint, you know how much of its previous history you will require to illustrate it; but if you first enquire the history, since you do not yet know what it is to illustrate, you cannot tell how much of it you shall want, and must allow the patient to tell what he thinks fit; and since every person's complaint is interesting to himself, he is apt to discourse about it rather too

much at large, and too little to edification. Therefore it is that I now always enquire the history last, inverting (if you please) the order of nature; and I take care to make the patient answer express questions rather than leave him to expatiate at his own discretion.

"And now the case is taken and recorded in a book by the clinical clerk, not that I deliver over to be recorded all the circumstances that come in the progress of the examination, but only such a selection of them as may serve to declare the disease, and furnish guidance and direction in the treatment of it.

"The case, I say, is now taken, provided there be no suspicion of disease in the chest. But if there be, the patient must be submitted to the process of auscultation." (P. 47.)

"With auscultation I almost always use percussion; and the results of the one perpetually correct or confirm the results of the other, and strengthen the diagnosis.

"But does all clinical instruction consist in directing the mind how to ascertain mere particulars, whether by auscultation or percussion, or by whatever other method is adopted for their discovery in different organs. No. Clinical instruction is not merely occupied in directing observation to facts, but it assists the mind in estimating their value. Thus, when the record of the case has been read aloud, I admit you to share in my deliberation upon all its particulars, while I endeavour to assort them and bring them together, and make them yield all the light they are capable of throwing upon the nature and seat of the disease. Sometimes I can at once come to a confident diagnosis; and when I can, I at once announce what it is, and give my reasons for it.

"Sometimes, after great pains of enquiry, I am still in the dark; and when I am, I say so, and desire to reserve the case for future examination.

"Sometimes, perhaps most frequently, I feel that I have a tolerably right notion of the complaint, but require some circumstances to be more clearly made out before I can be absolutely certain. And then I state what are the circumstances which give me the notion that I have, and what I still desiderate to bring me to a more confident conclusion.

"The case still remains to be prescribed for. In prescribing, I endeavour to be as simple as possible, to make the indications of treatment as intelligible as possible, and the object I have in view clearly seen.

"The case thus examined, and commented upon, and prescribed for, I then commit to your future observation as a medical study.

"In the future progress of the case I am still present, not to give formal lectures, but to take care that none of the circumstances which continue to develop themselves may fall to the ground profitless; and that you may be tutored by *them*, and not by *me*." (P. 55.)

Dr. Latham has here enumerated the chief points comprehended in clinical study; and, under such a preceptor, it must be the student's own fault if his practical knowledge is not increased. It would be desirable, we think, to require from the more advanced of the pupils that they should occasionally examine the patients, and be questioned as to the grounds of diagnosis, particularly in cases affording clear physical signs to be detected by percussion and auscultation. We meet with so many practitioners who are desirous of the information which they know is to be gained by the use of the stethoscope, yet so unacquainted with its method of application, and so unable to distinguish the different sounds, that we would strongly urge on clinical teachers the necessity of giving a few systematic and elementary lessons on the employment of this instrument to all beginners. The student should begin by applying it to the chests of his companions, to familiarize himself with the natural sounds of respiration and of the heart; he should then be induced to apply it in bronchitis, or other cases affording clear indications, and thus educate his ear to distinguish sounds less easily appreciable. The plan proposed

by Dr. Latham, (p. 67,) of conducting examinations in the wards of the hospital, might be very serviceable: the practical knowledge of the pupils would thereby be much increased, and readily ascertained. The mere asking of questions in an examination elicits very uncertain proofs of practical acquirement. Many a student who can recognise a disease is puzzled when called upon to describe it; and, although the symptoms might suggest the employment of proper remedies to his mind, the attempt to enumerate the remedies in the examination-room may occasion him considerable embarrassment. Yet it is to be remembered that such examinations are the only means of ascertaining the student's industry; and this is a matter of very great importance.

We believe there are few more perplexing questions to a lecturer than that which he has to answer almost every day in the session, as to the best text-book of practical medicine. Dr. Latham seems doubtful of the benefit accruing to the student from having any such book; but the student's observation is certainly both stimulated and assisted by frequent reference to good practical works. The work most useful to him would contain brief and clear accounts of diseases, and of the prevalent opinions concerning them, including notices of the appearances found after death, and of the general treatment. Such a work would be well suited to the first six months of his hospital attendance; and its outline should be filled up by the clinical lectures. As the student became more advanced, he should be referred to the best monographs on the subjects of cases of interest presented to his observation at the time. Without reading, the observation of a student is not very productive; but, combined with it, it ought to be a source of daily increasing knowledge. Dr. Latham is, we feel fully assured, very far above the affectation of that kind of originality the claim to which can only be supported by the exclusion of medical authors from any share of the attention of his hearers; but he appears to us not to be quite aware to what an extent medical reading is disregarded in the London school, and by those who come forth from it. The mind of a London student seldom seems trained to the attention required for reading an original work with a perfect accompanying of the author from his observations to his deductions. That which is almost alone thought worthy of perusal in any work, is the chapter on treatment; and to the fostering of this indolence of mind the clinical lectures even of celebrated men have, we apprehend, contributed. The apparent cleverness and clearness of observation, and the confident details of treatment which give life to such discourses, have alienated the student from the less attractive but more safe and substantial lessons to be gained from reading and reflecting on more finished productions. Anything falling short of certainty is regarded by the London student as indicative of some deficiency in his teacher. All that he demands is, to be taught what to do. He has no conception of being grateful for being taught how to think. This latter error, however, Dr. Latham has not encouraged; a great part of his lectures being devoted to teaching the student to observe and to draw conclusions for himself.

Dr. Latham's manner is often striking, as in the following passages, with which his sixth lecture commences.

"In going round the hospital, my mind often reverts to the time when I was a mere beginner like yourselves; and I remember how strange and puzzling to me was

everything that I saw; how I thought I never should be able to distinguish diseases, one from another, as long as I lived; and, as to treating them, I could not look forward with the hope that my conscience would ever allow me to attempt any such thing. Above all, I was perplexed with the number and variety, and (as I humbly thought) contradictory nature of symptoms. It seemed to me, that if I could ever succeed in learning them all, it would be of no profit, for the same symptoms appeared sometimes to import one thing, and sometimes another. There was a patient, perhaps, suffering convulsions, and the physician evidently thought the case most grave and perilous, for he employed several remedies of the most gigantic power, and succeeded in saving him. But there was another patient suffering convulsions no less severe, and to my apprehension just of the same kind, yet so far was the physician from thinking seriously of this case, or treating it severely, that he just looked at the patient and smiled, ordered some cold water to be thrown in her face whenever the convulsions returned, and said that would cure her; and, sure enough, he was right. Moreover, many died who seemed to me to have little or nothing the matter with them, and many recovered whom I did not hesitate to condemn to death at first sight." (P. 140.)

Yet, although we admire the vivacity with which all this is expressed, we cannot but say, that, reflecting upon any experience of our own, the thoughts traced in the above passage appear to us to be such as would be far more likely to arise in the mind of a well-informed physician, than such as would offer themselves to the undisciplined student; and perhaps this peculiarity, which often gives to Dr. Latham's style in these lectures rather the appearance of being studied to produce an effect, arises from the difficulty with which any thing within his own experience can really suggest to him the state of mind of the majority of the students sent up from the country to the hospital with little previous education. There appears, too, a similar kind of inapplicability in avowing the extremest state of doubt as to the propriety of recommending any book on the practice of medicine, and yet advising the raw youth to animate his comprehension of the relative value of symptoms by the "careful perusal" of *Abercrombie on the Intellectual Powers*. Nor can we think the refinements which occur where Dr. Latham introduces the subject of symptoms are at all calculated to convey clear ideas to a student. They partake of the uselessness, as far as the mere learner is concerned, of all disquisitions on semeiology, although very large books have been compiled to illustrate that subject. They are like the clue to him who enters the labyrinth, of no use until its mazes have been explored, and he wishes to reconsider the steps that he has taken.

The modifications or changes in the economy induced by the slow and long-continued operation of stimulants present many curious circumstances to the attention of the pathologist; and the following description of their effect on the sensations derives, in our mind, additional interest from the analogy of such effect with the torpor and indifference to moral emotions and intellectual pleasures so often resulting from the same unhappy cause. The explanation of such changes is probably to be sought in the nervous system.

"I have often remarked, in the victims of extreme intemperance, that they have little or no consciousness of the pains and disordered sensations proper to the diseases which they suffer. This strange want of correspondence between the symptoms of disease derived from other sources, and those derived from the sensations, is a subject of very curious speculation medically, and of very melancholy interest morally. For the chief cause of the anomaly I believe to be really that to which I have alluded.

There are whole classes of society in London who are never really sober for years together. The sensations proper to health and to disease are alike unknown to them. In health, the stimulus of spirits, renewed day by day, and hour by hour, gives them feelings and excitement which are unnatural; and, however they may be mistaken for those of health, do in truth not at all belong to it. They are better, perhaps, and more pleasurable than any that health has to give, and they have superseded them. In disease (disease which it has itself produced), the stimulus of spirits gives them feelings and excitement which are still unnatural, and disguise or supersede the sensations which they then ought to have.

"People are frequently brought into the hospital just ready to perish of complicated visceral disease, yet declaring that they never suffered ache or pain in their lives until a few weeks ago. Their liver, spleen, kidney, and heart, and blood-vessels, are all disorganized. They are breathing, perhaps, with one lung; and the cellular structure and some cavities of the body are distended with fluid. Here is a disease which must have been the growth of years; yet true it is, as they say, that they have felt neither ache nor pain until within a few weeks. Spirits—spirits more and more recklessly taken—have sustained and excited, and cheated them, with false strength and false feelings, till fluid has gushed out everywhere, and vital organs have been suddenly oppressed, and down they have sunk at once, and irretrievably." (P. 151.)

These observations are not only interesting in themselves, and in relation to pathology, but deserve to be remembered by those who have to treat diseases as they occur in such habits. The application of principles of practice frequently requires caution, when what has been learned in one climate or country is acted upon in another; and, considered physiologically and pathologically, the inhabitants of a large city and of a small village can hardly be said to be of the same region.

About half of Dr. Latham's little work is devoted to the subject of auscultation, the neglect of which must be too well known to so experienced a London teacher. This neglect is so general that we cannot help ascribing it to a cause we have already alluded to,—a want of opportunities of learning how to apply the stethoscope, and a complete misconception as to what the ear is to expect when it is employed. To one who has listened half-a-dozen times to the natural sounds of the heart, and those which attend inspiration and expiration, some of the sounds which depart from those that are normal are so palpable, so easily recognised, and with so much certainty associated with particular pathological conditions, that, after once witnessing a good example of the latter kind, he cannot evermore doubt the value of the stethoscope. The knowledge of the morbid signs, thus commenced, is easily increased, until all the most useful indications are readily available to the practitioner. It may be that zealous auscultators, gifted with remarkable delicacy of ear, have increased the number and the nicety of these indications with the effect of discouraging those only commencing the practice of auscultation; and this consideration gives particular value to the instructions which Dr. Latham has laid before his pupils, with the intention of inciting them to employ their ears, in suitable cases, as continually and as effectually as their hands and their eyes. We must say, indeed, that he has delivered himself on this subject with so much judgment, clearness, and force of persuasion, that, for this reason, if for no other, his lectures would be usefully placed in the hands of every student. He sets out by explaining to them, with reference to the principal diseases of the chest,—pneumonia, pleurisy, and phthisis,—that there is no such thing as a pneumonic, a pleuritic, or a phthisical sound; but that the sounds heard in

such diseases are the results of certain morbid processes going on, or certain changes wrought in the structure of the parts affected; that such sounds denote that a part of the lung is loaded with fluid, or condensed with solid matter, or hollowed into cavities; and that by this means "we anatomise by auscultation," and anticipate the disclosures of morbid anatomy. His recommendation first to study auscultation in healthy subjects is in strict accordance with the opinion already expressed by us; and he takes care, by some judicious remarks on the varieties of healthy respiration, to prevent discouragement to the beginner, which might arise from the various intensities of the respiration in various constitutions. In short, the eight lectures which Dr. Latham has devoted to the subject of auscultation, and which we shall not attempt to condense, deserve the most attentive perusal of the student, who should at the same time never visit the hospital without a stethoscope. It is only by the daily use of this instrument that it can be made fully available to the purposes of the practitioner. Dr. Latham has very candidly stated some of the difficulties and mistakes that are incidental to its application, but has also shown that they are such as may be overcome by patient repetition, and by careful reflection. The student, whom his admirable lessons encourage to make himself master of this instrument, will not only find that he has become an adept in the diagnosis of diseases of the chest, but that he has acquired a large fund of pathological knowledge, and a habit of exact examination which will daily add to its amount. A lecturer does his highest duty to his pupils when he thus prepares them. The pretender labours to instil his own peculiar doctrines; to create a party in favour of certain theories; to direct his followers to modes of practice that are to reflect upon the teacher the fame of originality. The man of science knows that the period of study is so short as not to permit the mind to become fully stored, or the opinions to be fully formed; he looks forward to the improved views which successive years surely bring, and his principal aim is so to inform and discipline the minds of his pupils as to make them safe and useful practitioners, and prepared to acquire whatever knowledge they have the means of obtaining throughout all the years of their practice. The tendency of Dr. Latham's lectures is precisely of this kind; and it is unnecessary for us to say more, either to recommend them to students, or to express our approbation of their merits.

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ART. II.—*An Enquiry into the Pathology, Causes, and Treatment of Puerperal Fever: being an Essay for which the Fothergillian Gold Medal was conferred on the Author, by the Medical Society of London, in March, 1835.* By G. MOORE, F.R.C.S. &c.—London, 1836. 8vo. pp. 247.

WE cannot look upon this work merely as a digest of literature on the subject of puerperal fever: it claims a much higher rank; for Mr. Moore has canvassed the merits of the various opinions entertained by authors upon it, and corroborated here and there the various facts from the results of his own experience.

One of the great faults of the many authors upon puerperal fever is the having described a variety of affections under the same name; an over-



sight which has given rise to great confusion and contrariety of opinion. Nothing is more important than to set out with distinct notions of the precise form of the disease in question, but unfortunately, in the present case, the having appeared in the puerperal state, and partaking more or less of a febrile or inflammatory character, has too often been deemed a sufficient reason for bringing under the head of puerperal fever affections differing exceedingly in their nature and treatment. This has been ably set forth by the author under the head of Preliminary Remarks, which are well worthy the attention of the obstetric practitioner.

Having taken a condensed or summary view of the symptoms of this disease as they are given by different authors, he comes to the following deduction:

"On a close inspection of this condensed and accumulated evidence, we shall discover that the summary of symptoms belonging to this formidable disease contains all the essentials of synochus: debility of corporeal and mental faculties, increased animal heat, disordered secreting functions, accelerated circulation, and excessive thirst. These constitute a perfect definition of fever according to the best authorities, and the only peculiarity in this affection appears to be the superaddition of abdominal pain. The action of the heart and arteries is greatly influenced from the earliest period of the disease; and that this is not the effect of inflammation appears from the circumstance that no other indication of disorder can be detected at the commencement of the attack. This great frequency of the pulse without any apparent reason has frequently led to the discovery of the disease, sometime before the patient has complained." (P. 34.)

The conclusion which the author thus arrives at is very important, and tends to confirm the opinion which we have long entertained,—viz. that that particular form of childbed affection which we are disposed to regard as especially, if not exclusively, entitled to the name of *the real and genuine puerperal fever*, strictly belongs to that class of diseases the fundamental character of which is a morbid condition of the blood, produced by the introduction of some deleterious agent into the circulation. It is to the last of the three species of puerperal affections so well distinguished by Dr. Douglas, of Dublin, that we wish, on the present occasion, to restrict the name of Puerperal Fever. It is "the really contagious or epidemical fever."

"The sensorium (says Dr. Douglas, quoted by the author,) is seldom in any degree disturbed: whereas in the others it is so frequently, and even sometimes is excited to high delirium. The pulse here is usually, from the moment of the attack, soft, weak, and yielding, and in quickness often exceeds 150; whereas in the first species it is full, bounding, and often incompressible; and in the second small, hard, and contracted, and in both moderately quick. The eye, instead of being suffused with a reddish or yellow tint, as in the others, is here generally pellucid, with a dilated pupil. The countenance, instead of being flushed as in the others, is here pale and shrunk, with an indescribable expression of anxiety; an expression altogether so peculiar, that the disease could on many occasions be pronounced or inferred from the countenance alone. The surface of the body, instead of being, as in others, dry and of pyrexial high heat, is here usually soft and clammy, and of heat not above the natural temperature; and not only is the skin cool with clammy exudation, but the muscles, to the impression of the finger, feel soft and flaccid, as if deprived of their vis vitæ by the influence of contagion. Indeed, there is such prostration of muscular strength and depression of vital principle from the very outset of the attack, that I must suppose the contagion to act on the human frame through the medium of the nervous system in a manner analogous to that of the contagion of the plague." (P. 42.)

The author's diagnosis of this disease is simple and practical: we could have wished that he had not attempted to distinguish hysteritis from uterine phlebitis; two diseases very near akin to each other in every respect, even in a practical point of view. He, with much judgment, points out the errors of several modern authors on this subject.

In speaking of "the usual appearances on dissection," he notices a fact which has not been so duly considered by morbid anatomists as it deserves. "When the patient is rapidly destroyed by the violence of the disease, the morbid changes bear no proportion to the severity of previous symptoms: a dubious trace of inflammation, a little bloody serum, or a few feeble adhesions, are all that dissection under such circumstances displays." (P. 63.) Among the "appearances on dissection," we certainly expected to see the appearances and condition of the blood noticed; but, beyond the single observation, that "the blood is commonly darker and more fluid than usual," (p. 65,) he does not favour us with a single remark upon this important point, until at a later part of the work; and he here devotes several pages to investigate the state of the blood in puerperal fever. Having given the observations of Gordon, Hey, and Campbell on the appearances of the blood when drawn, as tending to show its inflammatory condition in this disease, (observations which, we think, should be received with great caution, from the uncertainty of the precise form of the epidemics which these authors have described,) Mr. Moore remarks:

"In the latter stages of the disease, the blood frequently presents the same phenomena as in other adynamic and malignant fevers. From the indisposition to coagulate, both during life and after death, being always greater in proportion to the adynamia, it has been argued that the vitality of the blood is diminished in the latter stages and worst forms of this disease. The rapid circulation, which is so invariably a symptom of malignant puerperal fever, is alone sufficient to account for certain changes in the blood, since it has been satisfactorily shown that such excitement and acceleration of the heart's action speedily exhaust the vital power. Deficiency of nervous influence must tend to deteriorate this fluid, since it is proved to be so manifestly dependent on the proper activity of the nervous system for its distribution and vitality." (P. 185.)

In making these observations, our author has, in our opinion, mistaken cause for effect. We believe that it is *not* the rapid circulation which produces the changes in the blood, but a morbid condition of this fluid, in which, its vitality being more or less destroyed, it is no longer capable of maintaining the regular action of the heart, but impels it to that unwonted rapidity which characterizes the pulse in this disease. We believe that it is *not* the deficiency of nervous influence which primarily tends to deteriorate this fluid, (although it may possibly react in this way afterwards,) but the deteriorated condition of this fluid which renders it incapable of supplying the brain and nervous system with their due degree of energy. It is owing to the "vitiated and vapid state of the blood," as Dr. Stevens has shown in so masterly a manner, when speaking of contagious fevers, that frequently "there is not one symptom of inflammation during the fatal progress of disease, nor one inflammatory spot to be seen after death to mark its existence, or to induce us to believe that anything but functional disease had existed in any of the solids; yet these are the very cases, of all others, which are most fatal."

In an article in our second Number, (page 559,) we stated our

belief that the physiological researches, especially during the last thirty years, both in this country and the continent, had satisfactorily proved that most, if not all, of the agents which exert such destructive energies on the nervous system do it through the medium of the circulation; as shown by the experiments of Christison and Coindet, of Brodie, Emmert, Viborg, and others. And we are much mistaken if future researches do not prove this equally of what we term the true puerperal fever. We, therefore, regret much to find no remark by the author on the state of the blood in the vessels after death. The entire absence of coagulation, the perfect fluidity, approaching both in colour and consistence to thin watery claret, have been scarcely noticed: the facts, it is true, have been hinted at, but not so distinctly brought forward as their importance demands, and, we think, not in their proper place. The black precipitate which the author observed in the blood of a person labouring under the adynamic form of this disease, tends to confirm the above views.

With such facts before them, morbid anatomists are not, we apprehend, justified in attributing this disease to a peculiar inflammatory affection of the peritoneum and abdominal viscera.

"The most legitimate conclusion to be deduced from the fact that these varieties" (described by Dr. Lee,) "arise under the same circumstances, would appear to be, that the specific and essential malady denominated puerperal fever depends not for its origin or maintenance on the inflammation which, in its progress, may exert a disorganizing influence on those structures to which it happens to be directed. The fever and the inflammation probably result from a common cause, which acts directly on the vital functions associated with those organs affected, either by an impression produced immediately through the nervous system, by the propagation of morbid matter from without, or by the circulation of deteriorated blood." (P. 83.)

It is well known to most of our readers that Dr. Lee, who has devoted much time and attention to this subject, and whose authority in obstetrical pathology is justly so high, is opposed to the view which the author advocates. Dr. Lee considers that the various morbid changes, "decidedly the effect of inflammation," account "in a most satisfactory manner for the constitutional disturbance observed during life." Mr. Moore's remarks on these views are well worthy of perusal.

"If indeed the destructive febrile affections which follow parturition, in all the various forms they assume,—inflammatory, congestive, typhoid,—depend on whether the serous, muscular, or venous tissue of the uterus be affected, it will of course follow, as a general inference, that uterine inflammation is essentially their cause. But this assumption, which is advanced as the result of extensive observation by the author above quoted, is merely begging the question at issue, and signifies only that febrile affections accompany the various forms of uterine inflammation. That these forms of inflammation are the proximate causes of the various febrile affections, is most completely refuted by the detail of his own experience, as relates to the varieties occurring under similar circumstances." . . . "It is evident that the disordered action must precede the change of structure, since we find that puerperal disease, exhibiting all the characteristic symptoms,—a rapid pulse, with pain of abdomen and pyrexia, frequently occurs, which rapidly proves fatal, and not a vestige of inflammation is to be detected in any of those tissues. Yet doubtless, were the disease to continue some time before it proved fatal, the evidence of its action might always be detected in the tissues; for continued disorder invariably produces organic alterations." (P. 89, 90.)

In following the author's quotations and observations respecting the

causes and concomitants of puerperal fever, we can scarcely agree with Dr. Hamilton in considering the peculiarly foetid discharge from the uterus as quite characteristic of the disease, because numerous cases of the worst sort have come before us, where no peculiar change in the quality of the lochia were perceived; the lochia were sparing, and ceased again in a few hours, or did not appear at all. In many cases, however, we have had ample grounds for concurring with Dr. Hamilton in attributing the virulence of the affection to "the imbibition or absorption of this self-generated poison."

The only question in our mind is, whether a disease thus produced be genuine puerperal fever, or is not rather uterine phlebitis, with or without peritonitis, accompanied by typhoid symptoms. Dr. Copland appears to support a similar opinion. It would be difficult to draw the precise line of demarcation between the two affections: their extremes are, it is true, far enough asunder; but where uterine phlebitis is accompanied, as is frequently the case, with low ataxic fever, (both probably arising from the same source, viz. the introduction of poisonous matter,) it is hardly possible to distinguish them. Well has the author observed, (p. 126,) that we must "look for somewhat beyond the production of simple phlebitis, in order to account for any kind of puerperal fever." This applies equally to peritonitis, hysteritis, &c. "In puerperal fever, as in typhus, cholera, and other epidemic or contagious diseases, which seem properly to belong to the class *Neuroses*, there is, besides that of inflammatory action, another element, unknown, but which has an essential influence upon the intercurrent phlegmasiæ arising in their course, and which may yield at one point only to appear at another." (P. 126.)

"A peculiar virus (says the author in the following pages,) seems to prevail throughout the whole system, and operates most speedily on those parts most excited or most debilitated. This virus seems of a specific nature, and may be capable of producing contagion. Its probable influence is well exemplified in an experiment conducted by Mr. Leuret: he injected some blood from a living horse infected with gangrenous boils (*pustule maligne*) directly into the veins of a mare five months with foal. She died in five days afterwards. The heart, lungs, and intestinal canal were studded with dark ecchymosis; the uterus was gangrenous; and the blood was dissolved and dark coloured." (P. 127-8.)

For further illustration of this subject, we refer our readers to the observations we have already made thereon in our second Number, (p. 559.)

In the succeeding pages the author appears to lose sight of the great point for which he has been so ably contending: he seems for a time to be carried away by the late prevailing opinion of puerperal fever being produced by the formation of pus in the veins, the result of uterine phlebitis, and strains at the conclusion "that a peculiar condition of the system, induced by some virus acting upon the nerves, predisposes to uterine phlebitis, and renders it malignant." That pure healthy pus does not exert a poisonous action upon the blood is now pretty generally acknowledged; and we agree with the author in even doubting whether the pus produced be ever carried into the circulation, as the vein, from swelling of its parietes, deposits of fibrine, &c., becomes more or less obliterated. It should be remembered that the injury to the circulating

current had been produced even before the inflammation of the vein was established, and therefore long anterior to the formation of pus.

Although the author quotes an observation of M. Dupley, that he has never found abscess in the joints, &c., we cannot help feeling surprised that he has made no mention (as far as we can perceive,) of those peculiar effects which are occasionally observed during attacks of genuine malignant puerperal fever. Dr. Collins's observations on this head (which we have also quoted in our third Number, p. 95,) are well deserving of attention. The slight degree of pain, in no proportion to the sudden and rapid sinking of the vital powers; the absence of inflammation upon dissection; the appearance of diffuse cellular inflammation in the extremities, the decomposed condition of the muscles in these parts, and the perfect fluidity of the blood, are facts which ought not to have been passed over.

Able and satisfactory as we freely acknowledge the author's arguments to be against the assertions that the phenomena of puerperal fever are the result of inflammation, nevertheless, the enumeration of such facts as those to which we have just referred would have been of themselves a sufficient proof of the correctness of Mr. Moore's views. Our own observations, which follow the above-mentioned passage in our review of Dr. Collins's work, we also recommend to the reader's notice.

The only allusion which we can find to the peculiar deposits of matter just referred to, is at p. 139, where he says, "the existence of phlebitis, or purulent formation, either in the veins or loose tissues, may be only an accidental coincidence with this as with other fevers;" a conclusion which, after the facts the author himself has brought forward, we did not expect; and more especially because, a little further on, we meet with observations which, as far as we at present know of the subject, satisfactorily explain the formation of these remarkable deposits.

"As when the liver or the kidney is incapable of performing its proper function, deposits of bile, or of urinous fluid occur in various parts of the body, may not pus, in like manner, become a vicarious production, when the system fails to be relieved of its superabundant fibrine by the common outlets of excretion"? (P. 142.)

Whether nature endeavours to rid herself by this means of a superabundance of fibrine which is not removed by the common outlets of excretion, or whether it be an effort to relieve the circulating system of the morbid principle with which it has been contaminated, we will leave our readers to conclude from what has been already stated.

That purulent deposits are frequently found in the veins and absorbents in fatal cases of puerperal fever, is allowed on all hands; but we cannot concede that these phenomena are the characteristics of puerperal fever: they are the results of a concomitant disease, viz. inflammation of the uterine veins and absorbents, a disease which as frequently arises from the same cause. The author also mentions the remarkable circumstance of inflammation and destruction of the eye occurring in these cases: we can however, from our own experience, assure him that it is *not always* the left eye which is affected.

The observations which he has made under the head of "Contemporary Diseases" are very interesting, and tend to strengthen our view respecting the generic character of puerperal fever.

"Dr. Gordon, of Aberdeen, remarks that 'with it, and at the same time, epidemic

erysipelas began, progressed with equal pace, arrived at its acme, and terminated together.' He also says, that a very frequent crisis of the disease was an external erysipelas. Mr. Hey remarks, that infectious fevers were common at the time, and he does not recollect ever having seen such malignant cases of erysipelas as then. Dr. Clarke also observes, that those inflammatory diseases which occurred were principally erysipelatous. Dr. Armstrong states that, in 1813, (the year of its greatest prevalence throughout England,) low fever, typhus, and acute rheumatism, also prevailed to an uncommon degree." (P. 164.)

These facts have been confirmed by many other observers. That "erysipelas is a contagious and infectious disease, and consequently that it is caused by the agency of a morbid poison," is an opinion recently supported by Dr. Williams,\* by facts and arguments which claim attentive consideration. That phlebitis is a disease in which "speedily the symptoms assume the character of typhus," and where "there can be no question that the symptoms do very much resemble those which take place after the inoculation or absorption of an animal poison," are facts which have been still more recently pointed out by his able colleague, Dr. Roots.†

Armed with these authorities, we now turn back a few pages, to a chapter where the author has considered "the connexion of puerperal fever with erysipelas," (p. 142:) he commences as follows: "That puerperal fever has a decidedly inflammatory character, whatever be its cause, is now undisputed; and that phlebitis frequently attends it, is also undoubted." With the latter part of the sentence we of course agree; but we are surprised that the author should come to the conclusion "that puerperal fever has a decidedly inflammatory character," when, in the previous part of his work, he has so ably and so judiciously contradicted this too prevailing but (we conceive) erroneous opinion, and has shown so satisfactorily not only that puerperal fever is not necessarily accompanied by inflammation, but that it may exist entirely distinct from and independent of it. We refer our readers to the quotations we have made at p. 34 and 63 of the author's work, and particularly to the arguments which he adduces against Dr. Lee's opinion as to the inflammatory nature of puerperal fever, (p. 89-90,) where he not less distinctly than correctly shows that the symptoms of puerperal fever may run their fatal course, "and yet not a vestige of inflammation is to be detected in any of those tissues." He seems, as we have before observed, to have lost sight of the main object for which he has been contending, and to be carried out of his right course by the conflicting currents which surround him.

The subject of puerperal fever is confessedly one of no slight difficulty, and we candidly own that there is none the discussion of which we have always approached with more reluctance: still, however, we must not allow the author, after having advanced so far and so well, to fail at last, without reminding him of what he has already achieved in the preceding parts of his work.

That puerperal fever does frequently bear a strong analogy to certain forms of erysipelas, cannot be doubted: we have already pointed out the similarity of their origin. That a similar identity exists between the worst forms of uterine phlebitis and these species of erysipelas, we have also endeavoured to show. This brings us to the author's observations

\* St. Thomas's Hospital Reports, No. III. p. 327.

† Op. citat. p. 358-9.

on the contagiousness of puerperal fever: these are short and judicious, and tend to prove that puerperal fever may be distinctly communicated by contagion: he resumes his former excellent train of argument, and says, "the facts bearing on the contagious nature of puerperal fever are numerous and forcible. Those writers who have espoused the opinion that this fever is simply the effect of local inflammation are, of course, opposed to the notion of its being contagious; but, if the facts recorded cannot be invalidated, their opposition must prove futile." (P. 149.) The diseases in the same class to which it belongs are all capable of propagation by contagion, and most, if not all of them, by an epidemic constitution of the air. Experience has proved that puerperal fever may be communicated by either of these means; facts have moreover occurred within our own personal knowledge, of the disease being more or less communicable to those not in the puerperal state. In one case, a woman who washed the linen belonging to a patient who had sunk under a short but violent attack of puerperal fever, was seized with diffuse cellular inflammation of the hand, which terminated in extensive sloughing.

The importance of ventilation and dry air as a preventive means are shown by the experience of Dr. Collins and M. Caillard.

"The experience of M. Caillard, in the lying-in wards of the Hôtel Dieu, from January to May, 1831, seems fully to prove that changes of temperature and humidity have great influence over the disease; for, in consequence of his determination that his patients should enjoy a wholesome atmosphere, he made great changes in their hygienic treatment, the result of which was that, instead of a mortality of one in seven, it soon became only one in seventy-seven." (P. 197.)

From Dr. Collins we have largely quoted on this subject in our third Number.

The author informs us, (p. 201,) "It does not appear that the disinfecting and purifying vapour of chlorine and other acids has ever been tried in this disease. The fœtor in lying-in hospitals is at times almost intolerable, from which, arising (as it evidently does) from the decomposition of animal matter, the experiments of Magendie would lead us to expect deleterious effects. Chlorine would counteract the poison in this as in other instances." We will not quarrel with the author for calling chlorine an acid, but we must differ from him as to the fact of chlorine, &c. not being tried in this disease, and we refer him to Dr. Collins's work. We can also assure him that chlorine has been, and is constantly employed at similar institutions in the metropolis.

We fully agree with him in the importance which he attaches to preventing any offensive accumulation of the lochial and vaginal discharges, by the proper employment of injections, &c. But we have already made some observations on this subject in our review of Dr. Collins's work, and need not therefore repeat them. We are glad to find that injections of warm water into the vagina are advocated by the author.

In speaking of bleeding, local as well as general, the author very properly deprecates the French practice of employing such immense numbers of leeches, and justly observes, that "the debility produced by the hemorrhage from one or two hundred leech-bites must be often so great as to preclude recovery." That leeches "may be advantageously employed under certain circumstances," we fully agree with him. Mr. Moore terminates his observations on bleeding with the following sound remark:

"When the cases of puerperal fever are comparatively few, although still epidemic, or when they are declining in frequency,—that is, when the cause of the disease is less active,—they are such as venesection generally relieves, and often completely and quickly cures. The symptoms in such cases are great increase of heat, acute local pain, distinct hard pulse. Bleeding, however, is of little avail when the muscles become flaccid, the skin clammy and relaxed, the pulse small and frequent. Pyrexial heat is rarely developed under the latter circumstances, since the vital energy is suppressed." (P. 217.)

The value of purgatives is admitted, but at the same time duly qualified by the following remark:

"That early purgation is indeed an essential auxiliary in the treatment, is amply testified by those who have been most successful; but that it alone should be capable of arresting the progress of so fierce and rapid a disease, is scarcely credible. We are ready to conclude, that Richter and others cured irritation of the bowels with purgation, but discovered the phenomena of puerperal fever only with the scalpel." (P. 223.)

Mr. Moore speaks highly, and yet judiciously, of the value of mercury, and does not appear to look forward to inducing salivation as the effect necessary to be produced before relief can be obtained.

"When guarded by opium or Dover's powder, and administered in small doses at suitable intervals, it offers the best auxiliary to allay the general irritability which accompanies this fever. Unless, however, the inflammatory tendency be previously subdued, its utility is at best but questionable, unless when so exhibited as to act briskly on the bowels. In this way large doses, under skilful management, have certainly been prescribed with great advantage." . . . "Yet, though mercury brings the system completely under its specific influence, it does not possess any power to check the course of the disease." (P. 225-6.)

He quotes Dr. Dewees's excellent remarks *against* producing the specific action of mercury upon the salivary glands, with which we fully agree. In the worst forms of puerperal fever, we must confess that we have never seen much benefit arise from the use of mercury, except where it had been given in one or two large doses at the beginning, so as to produce a general increase of all the excretions.

With regard to alkalies, the author mentions their having been found useful in the practice of Mascagni, Guniot, Allen, and especially M. Recamier, who gave the carbonate of potass. We have before mentioned that we have found advantage from them in puerperal epidemics, when everything else had seemed to be without effect; but we must have further confirmation of this fact before any distinct inference can be drawn.

The advantage of fomentations is shown, and a short summary given of the different opinions respecting the employment of turpentine.

With this we close our review of Mr. Moore's work. If we might presume to advise the alteration of those passages to which we have objected, (and in which, upon impartial consideration, we are sure he will agree with us,) we feel confident that the second edition, which the work well deserves, will hold a very high rank among treatises upon this subject: as it is, it is decidedly a work of great merit, and is an honorable proof of its author's talents and acquirements. The getting-up of the book is good, but the proper names are frequently misprinted.

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ART. III.—*Medical Commentaries on Puerperal Fever, Vermination, and Water in the Head.* By JOHN ALEXANDER, M.D., Medical Officer to the General Dispensary for Children, and Bank of Manchester, &c.—London, 1836. 8vo. pp. 70.

OF the many minor defects and errors which constantly meet our eye in the actual condition of the profession in this country, there is no one which seems to us more to claim reprehension than the desire so prevalent among our younger brethren to come forth as authors, before experience and extensive observation have enabled them to obtain a sufficient stock of that superior knowledge which should seem to be an essential qualification of all who profess to instruct others. Not that we would regard with reproving or even cold looks the efforts of youthful genius or industrious research, but, on the contrary, count it as one of our dearest duties to foster and promote every thing of the kind. For such juvenile essays, however, the numerous journals which admit of what is termed Original Communications are the appropriate receptacles; as the simple record of facts is the most becoming occupation of the pens of those who can only be considered in the condition of learners, and not of teachers. Whenever we see any gentleman of this class coming forward as a public instructor,—that is, as the author of a book on a practical subject,—we experience sincere regret, because such publications are (with rare exceptions) generally the source of future regret to their authors, when longer experience has proved to them that, when they sought to teach, they stood most in need of learning. Such were our feelings on reading the present pamphlet; and such, if we are not very much mistaken, will hereafter be those of its respectable but youthful author.

Of the three essays of which this pamphlet consists, the last two, on Vermination and Hydrocephalus, do not contain a single observation offering the least claim or pretence to novelty, while they display numerous omissions of importance, and not a few positive errors.

The Essay on Puerperal Fever lays direct claim to novelty, being characterized by its author as containing “doctrines professedly peculiar;” but its sole merit consists in urging on the inexperienced practitioner (no man of experience can stand in need of such a warning,) the necessity of carefully discriminating the varieties and stages of the different morbid affections commonly classed under the general name of Puerperal Fever. As to the alleged *peculiarity* of the doctrines relative to the pathology of the disease, we believe that those who have reflected on that condition of the nervous system which often succeeds to sudden or severe shocks or impressions of any kind, and which we have pretty fully discussed in our last Number, (see the review of Mr. Travers’s work on Constitutional Irritation,) will have nothing to learn from Dr. Alexander’s “doctrines.” What he calls exclusively puerperal fever is either the variety particularly adverted to in the preceding notice of Mr. Moore’s work, or a particular stage of some of the other varieties; the form or stage, namely, of irritation or depression of vital power, of the existence and general character of which no practitioner of experience can be ignorant. And, as to the degree of additional light thrown on its

intimate pathology by our author, we leave the reader to judge from Dr. A.'s own definition of the disease.

"I conceive it [puerperal fever] to be a *depressing affection of the abdominal nerves*, (as well as, in less degree, of the nervous system generally,) *strictly sui generis*; of which, from the peculiar nature of their functions, we are unable to take any physical cognizance, beyond such as relates to the observance of their morbid influences on the human frame. I apprehend it to be perfectly distinct from an inflammatory affection, although frequently terminating in or leading to one." (P. 12.)

No one will dissent from Dr. Alexander's opinion, that the morbid state which characterizes the first stage of many cases of puerperal fever, and the whole progress of some, (as, for instance, of that form which, in the preceding article, we have termed "the real and genuine puerperal fever,") is different from inflammation, or is, at least, (to avoid all possible misapprehension,) inflammation so modified by antecedent conditions of a different kind as not to bear the usual treatment of inflammation; and we are surprised to find him stating that such a state is "almost universally reported" to be inflammation. Of the frequent coexistence of inflammation, however, with such a state of nervous irritation and depression, and of the still more frequent transition of the one into the other, no one will doubt; and, indeed, this is abundantly admitted by the author himself.

"I have remarked that puerperal fever, if it do not rapidly prove fatal, generally merges into an inflammatory affection. The inflammation may attack the peritoneum, the ovary, the uterus, or the intestines, all at once, successively, or be confined to one organ." (P. 16.)

That, in cases like the above, active antiphlogistic measures are indicated, is as certain as they were contraindicated in the cases previously referred to; and the sole merit of the author of the present work, as we have already said, consists in calling the attention of those who are unacquainted with it to the important fact. The following extract well illustrates the mistakes likely to be committed by a young and book-taught practitioner, and points out their fatal consequences.

"The various doctrines prevalent as to the nature and treatment of puerperal fever have been of this exclusive character. The opinions of their several promulgators are entitled to our respect, some almost to our adoption; but their indiscriminate application to every case named or misnamed puerperal fever cannot be too strongly reprobated. To illustrate the mode of their pernicious influence:—A female is attacked with genuine puerperal fever, and is visited by an exclusive disciple of the antiphlogistic doctrine. Believing, as his preconceived notions lead him to believe, that this fell inroad of disease can but in one way (the large abstraction of blood,) be successfully opposed, he plunges his lancet into the veins of his patient, prolongs the copious stream, and secures for her an almost certain passage into a better world. Another lying-in woman, by dint of good constitutional powers, we will suppose to have survived the essential stage of the malady, and to be attacked with *successive* inflammation. Her attendant may happen to be a disciple of the Hamiltonian school, who, under the impression that her complaint is genuine puerperal fever, *alias debility*, (that bugbear of practical medicine,) because forsooth she is in a puerperal condition, pours in his cordials to support a life he thus unconsciously destroys. Had this latter female happened to be seen by the former-mentioned practitioner, her life would have been in all probability saved; not from the one holding more correct views of the complaint's pathology than the other, but from the accidental *applicability* of those views to the *existing* state of the case. Again, imagine a woman attacked with a mild degree of puerperal fever: a disciple of Brenan visits her, pre-

scribes turpentine, and on his next visit perceives the complaint removed. Exposing herself to cold two or three days afterwards, we will presume her seized with acute enteritis: her medical attendant sees her again, and, *because she is in the puerperal state and he entertains certain notions*, turpentine is again solely trusted to. To detail the consequences would be superfluous,—they are too easily inferred. Finally, to instance one more effect of these *exclusive* doctrines, an individual is attacked with undoubted puerperal fever: her attendant, not knowing what to do, (for, provided he be inexperienced, to what source of direction can he with confidence look?) equally fearing to stimulate or to deplete, orders perhaps a mild aperient and an evening sudorific draught. What is the result? The disease advances—the practitioner remains undecided—the friends are distressed—the woman dies! This is no ideal picture." (P. 17.)

A great desideratum in pathological and practical medicine still remains to be supplied,—namely, a full and accurate account, and consequent discrimination, of the various febrile and inflammatory affections which occur in the puerperal state, and which have so long been confounded under the general name of Puerperal Fever. Many materials for such a treatise exist in the numerous works on childbed diseases in many modern languages; but the construction from these of one connected whole, such as is now needed, requires not merely industry and learning and a mind disciplined in general logic and philosophy, but a long, extensive, and chastened personal experience of the very diseases in question. Why do not some of the metropolitan physicians, connected with the lying-in establishments of London or Dublin, devote themselves to this great task? We think we could point out more than one eminently qualified for it.

There is nothing peculiar in Dr. Alexander's treatment; nothing, indeed, that may not be found in every elementary work on the practice of medicine. Fomentations to the abdomen, enemata, bloodletting, calomel combined with Dover's powder, purgatives of spirits of turpentine and castor-oil, are the remedies recommended, according to the particular circumstances of the individual case; and we discover no precepts regulating their administration which are entitled to the praise of novelty, or even of particular clearness of enunciation. On the other hand, we find not a little that is vague, and some things rather contradictory.

The quotations which we have given from Dr. A.'s work sufficiently exhibit the inaccuracy and imperfections of his style, although many more unfavorable specimens might have been extracted; and we are sorry to say that here, as in most cases, inaccuracy of language is combined with incorrectness of argument and inconsequential ratiocination. We trust that, when we next meet Dr. Alexander in the field of literature, he will have learned to correct these deficiencies, which, however countenanced by the general carelessness of medical writers, are not the less discreditable to the members of a learned profession, and are most injurious to the philosophical character of medicine as a branch of general science.

**ART. IV.—*An Essay on the Operation for Cleft Palate.* By GEORGE BUSHE.—New York, 1835. Quarto, pp. 20; with Plates.**

ONE of the consequences of the more accurate knowledge we now possess of the manner in which reparation is effected in living bodies, is a diminution in the number of those diseases and malformations which were at one time committed entirely to the skill of the machinist. His contrivances, however skilfully managed, must notwithstanding be considered as the opprobria of surgery; for this science consists in aiding and directing those powers which the body possesses of mending its own defects, and not in repairing it as a mechanic does a machine. Science is therefore much indebted to Dupuytren, Gräfe, Dieffenbach, Roux, and others, for having directed their attention to modes of remedying by operation cleft palate, artificial anus, the loss of the nose, recto-vaginal and recto-vesical fistulæ; and thus enlarging the domain and extending the usefulness of surgery. Our own surgeons have not been behind their continental brethren in their useful operations; and the present essay, by Mr. Bushe, of New York, proves that the same spirit prevails among the most esteemed operating surgeons in America. Mr. Bushe, who is a surgeon of much celebrity, having had occasion repeatedly to operate for cleft palate, has been led to devise plans for its execution, which have proved so effectual that he has been induced to publish them; and, if the report be correct that the late fire at New York destroyed almost the whole of the impression of Mr. B.'s essay, we shall hope to be the means of giving his views a wider circulation than they could otherwise have gained.

As far as it goes, Mr. Bushe's treatise is valuable. It is very clearly and circumstantially written, and, although relating to an operation now familiar to most operating surgeons, it contains several particulars well deserving attention. We should have been still more indebted to Mr. Bushe, if he had presented to us something new on the more difficult subject of fissure of the bony palate; but he takes no formal notice of this branch of the subject. His instruments are both complex and minute; and the remarkable success said to attend the operation in the hands of Mr. Bushe has induced us to incur the expence of drawings of them.

The causes which Mr. Bushe believes to contraindicate the operation for closure of a fissure of the soft palate are the following:

1. Infancy, childhood, and boyhood; as the mouth is too small for the necessary manipulations; resolution and acquiescence are insufficient; and abstinence, particularly from drink, is less easily borne, nutrition being more vigorously carried on.
2. Affections of the lungs attended with cough, or affections of the stomach with vomiting, eructation, &c., from their dislodging the sutures.
3. Diseased tonsils, or other diseases of the fauces, from their creating irritation.
4. Excessive irritability, from its producing continual cough and endeavours to detach mucus from the fauces.

This state of the system may be ascertained by passing instruments into the pharynx, and detaining them for a moderate length of time;

when, should the patient be irritable, he becomes anxious and restless; also by studying his character, and enquiring into his conduct in former illness. Although this state depends much upon organization, yet it is often produced, and always increased, by mental and bodily indisposition; therefore the operation should be postponed until, by proper regimen, medicine, and constant exercise of moral restraint over his feelings, the infirmity be removed or palliated.

5. Preternatural thirst is an insurmountable obstacle to success; as the heat, dryness, and constriction of the fauces, as well as the viscosity of the saliva and mucus, will become so intolerable, that the patient cannot resist drinking; and, indeed, a moderate quantity should in such circumstances be allowed.

This may depend on disease, habit, or organization. "If the consequence of disease, appropriate means must be employed to combat it; if of habit, moral discipline should be strictly enjoined; and if of organization, the experiment ought to be made, whether, by repeatedly injecting fluid in small quantities into the rectum and bathing the surface, the thirst can be sufficiently allayed for a length of time equal to that during which we are generally compelled to withhold drink after the operation." Provided then this experiment succeeds, or the disease is removed, or the habit broken, the operation may be undertaken, but not otherwise.

6. Hot weather is obviously disadvantageous.

7. Complete separation of the bony palate to the extent of an inch will render the case unfit; as in such instances each half is directed considerably upwards and inwards, which creates such tension that the sutures are soon torn out of the velum.

When none of these objections exist, the following points should be attended to:

1. For a few weeks previously, the skin and mucous membranes should be brought into a healthy state by exercise in the air, diet, &c.

2. A month before, two thirds of each half of the uvula should be removed; otherwise, after the coaptation of the velum, they will be separated by the pressure of the base of the tongue, and, being swollen, will irritate the fauces.

3. During the previous week, blunt instruments should be passed into the fauces daily, and the jaws should be retained open for as long a period as possible, to accustom the parts to the protracted duty they will have to perform.

4. The operation should be commenced four hours after a meal, in order that digestion may have been performed, lest irritation of the fauces should produce vomiting.

Mr. Bushe divides the operation into two stages,—the section of the palate and the insertion of sutures, which he now performs with an interval of four hours. In this he differs from other surgeons, some of whom have first inserted the sutures and then divided the velum; but Mr. Bushe found that the sutures produced so much irritation and muscular action, that it was difficult to cut the velum evenly, and that the sutures were in danger of being cut, and interfered with the action of the knife. He also found that, when he divided the velum first, and then inserted the sutures immediately, that difficulty arose from the irritation of the muscles and from the bleeding; and consequently he now waits four

hours, directing the throat to be gargled with iced water in the interval. This allows the spasm of the muscles to subside, and the parts obtain their ultimate degree of tumefaction, so that the ligatures are not tied too tight nor too slack.

Great care should be taken in cutting the borders of the velum perfectly smooth, and through its whole thickness: from half a line to a line, or even more, should be cut off. For this purpose Mr. Bushe employs a knife and forceps of somewhat peculiar shape. The blade of the knife is one inch and a quarter in length, one-sixth of an inch in breadth at its widest part, and sharp on the back for a quarter of an inch, with a slender handle five inches long. He prefers this to Dieffenbach's double-edged lancet-shaped scalpel, which is apt to cut the velum out of the line of incision with its posterior edge, as it is broader and not blunt on the back. The forceps (Fig. 1,) is seven inches in length, and so bent that the operator's hand may correspond to the side of the patient's face; thus permitting a clear view of the interior of the mouth, an object of great importance not hitherto attained.

Fig. 1.



"The extremity of each chop of this forceps is half an inch long, three-eighths broad, and one-sixteenth thick; they stand out at nearly a right angle from the curve, and are furnished, one with a groove, (*a b*,) and the other with a projection adapted to the groove," (*a c*.)

Thus the surgeon can seize a considerable portion of the entire thickness of the velum, and hold it horizontally, so as to ensure a smooth and vertical section.

"The patient being seated near a lofty window, with his mouth open, and his head fixed by an assistant, I take hold," says Mr. Bushe, "of one side of the velum with the forceps, being careful to embrace as much and no more than will prevent the muscles retracting this curtain from the mucous membrane. With the back of the knife turned towards the pharynx, I now transfix the velum obliquely upwards and backwards close to the extremity of the forceps, and, by a steady sawing motion, divide it beyond the angle; then, turning the edge of the knife inwards and downwards, I complete the section with the same sawing motion. In a few minutes, when, by ablation with iced water, the hemorrhage ceases, I treat the opposite side in a similar manner. Should a portion of the bony palate be deficient, we ought to detach a few lines' breadth of the velum on each side from the posterior border of the palate bone, which enables us to approximate the edges of this curtain with comparative ease." (P. 12.)

In case the patient be unsteady and cannot keep his mouth open, Mr. Bushe employs a speculum. It consists of two transverse bars, the superior of which is adapted to the shape of the palate, and the inferior to the floor of the mouth: these are connected by a vertical bar and screw, by which the interval between them is adapted to the size of the mouth.

Mr. Bushe completes the second part of the operation with two instruments,—the suture instrument and the knot-maker; which differ considerably from those hitherto in use, and seem both ingeniously contrived

and well adapted for their purpose. We give accurate representations of them, and the author's minute account of the manner of using them.

Fig. 2.

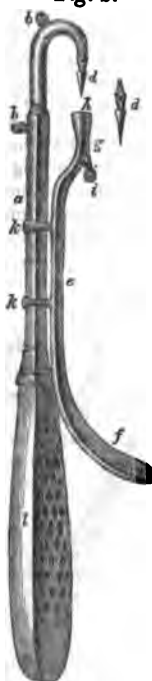
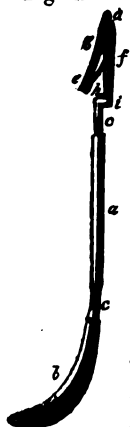


Fig. 4.



"When the second period of the operation arrives, I complete it with the following apparatus, viz.: suture instrument and knot-maker. The suture instrument (Fig. 2,) consists of three parts; the first (a) which is inserted into a handle similar to that of an aneurism needle, is four inches and one-quarter in length, one-sixth of an inch broad, and one-eighth thick, except about an inch and three-eighths from its distal extremity, where it is contracted to one-half its size, becomes circular, and is bent, nearly corresponding to the curve of a dissecting hook. Two small rings (b b) are attached to it, one being situated on the most convex part, and the other one inch and an eighth nearer the handle. These rings are for transmitting the ligatures, which are thus prevented from becoming entangled or interfering with the sliding bar. The second, or needle, (d) is three-eighths long, and consists of three parts, viz.: the blade, which is one-sixth of an inch in length, triangular, and furnished with shoulders; the middle, which is one-eighth of an inch long, and perforated for the transmission of the ligature; and the upper blunt or narrow prolongation, which is one-twelfth of an inch long, and is lodged in the extremity of the curve of the first part. The third and last part of this instrument is a sliding bar (e) five inches and five-eighths in length, one-twelfth of an inch thick, and one-sixth broad, terminating at its proximal extremity, in a small handle, (f) and furnished at the other, which is round and five-eighths of an inch in circumference, (g) with a spring (i) and cavity (h), for the reception of the blade and middle portion of the needle. This bar is connected with the body of the instrument by two bands, about an inch apart, and one inch and a half from its distal extremity, which stands outwards, so as to range with the needle.

"The ligatures should consist of two threads of three-twist silk, and be three feet in length: having passed the extremity of one ligature through the eye of the needle, then carried both extremities through the rings, and twisted them round the handle so as to secure the needle firmly in its socket, the curved extremity of the instrument should be carried behind the velum at the base of the uvula, and then brought forwards through this curtain three or four lines from its border, forcing it from behind forwards and from above downwards. When the point of the needle appears through the velum, the sliding bar should be pushed onwards until it embraces the needle, and, through the medium of the spring-catch, holds it firm while withdrawn. The other extremity of the ligature is to be carried through the opposite side of the velum in the same manner. Another ligature should then be passed between the first and the angle of the wound, which in the majority of cases will be sufficient.

"The last part of the operation consists in tying the knots; and this I accomplish with the instrument represented in Figs. 3 and 4. This instrument consists of two parts, viz.: one for making the noose, and the other for retaining it in close contact while the second knot is made. The first part, or that for tying the knot, (Fig. 3,) is fixed in a handle like the suture instrument, is three inches and three quarters in length,

Fig. 3.



one-sixth of an inch broad, and one-twelfth thick. It forks about one inch and a quarter from its distal extremity, the ends of the prongs (*b b*) being five-eighths of an inch apart, and bored for the transmission of the ligatures. About three quarters of an inch from the handle on its anterior face, is a ring (*c c*) with the superior portion cut out to the extent of one-tenth of an inch; another (*c c*) arises from the prongs, seven-eighths of an inch from their extremities, for the accommodation of which, they are compressed in this situation. The second portion (Fig. 4,) consists of a slender bar, (*a*) four and a half inches long, furnished at the proximal extremity with a small handle, (*b*) and at the distal with the forceps (*d e f*). For three-eighths of an inch from the handle, and the same distance from the forceps (*c c*), this bar is square, and one-twelfth of an inch in diameter; between these portions, it is one-eighth of an inch broad, and one-sixteenth deep. The forceps is seven-eighths of an inch long, the inferior portion of which is continuous with the bar just described, but, on a line one-twelfth of an inch below it; while the proximal extremity of the superior portion is furnished with a strong spring (*h*) that works upon the inferior. Both portions are connected by a semilunar joint (*g*), and the chops are three-eighths of an inch long. This second portion of the instrument is placed on the first and secured in the brackets above described, with the chops of the forceps open, because of the pressure of the distal bracket on the superior portion of the forceps.

"Before tying the ligatures, we ought gradually to draw each of them forwards, and, while holding them steadily so as to prevent any drag on the palate, an assistant should wax them anew; a proceeding of the utmost importance, for by their long stay in the mouth they are apt to collapse, and the knots to give way. This being done, the lowermost ligature should be tied first, in the following manner:—the ends being passed through the holes in the prongs of the instrument, the latter should be pushed onwards until the edges of the palate are approximated, taking care not to tie too tight, else the ligatures will destroy the vitality of the parts included; and here we find the advantages of allowing the velum to swell before we pass the sutures, as then we know how tight we ought to tie. The knot being made, the forceps should be pushed forwards, so that it may grasp the knot by virtue of its spring, the counteracting force being removed by change of position. By the greater narrowness of the bar near the forceps and handle, it will now slip out of the brackets and remain hanging from the mouth, while we make another noose, which is to be treated in the same manner. The second ligature ought then to be secured like the first, and thus the operation will be completed." (P. 14.)

The subsequent treatment is most important. The patient should avoid coughing, swallowing, and speaking; sit erect, in order to avoid sleeping; for, when asleep, the throat dries, and the patient is apt to start up and tear out the sutures in an effort to swallow. A cup of beef tea should be injected every two or three hours into the rectum, to sustain the powers and to supply the blood with fluid: if this quantity purges, it should be diminished. The mouth should also be rinsed with iced water, to keep it cool and allay thirst. If there is a tendency to cough, five drops of laudanum should be given occasionally. The upper suture should be removed on the fourth, and the inferior on the fifth day, as they then become loose, and are apt to create erysipelatous inflammation and ulceration.

Besides the instruments, the novelties introduced by Mr. Bushe consist in waiting four hours until he inserts the sutures, and in applying only two. For both of these modifications Mr. Bushe gives solid reasons: for the first, the subsidence of spasm and the waiting for tumefaction; and for the second, the fact that he has rarely seen adhesion take place at the points where the sutures were applied. Mr. Bushe's remarks on the causes which contraindicate the operation, and the preparatory and after-treatment, are those of a judicious practical surgeon; whilst the ingenuity displayed in the instruments for making the sutures proves him to be an adept in the mechanical department of his art.



We conclude this notice with the account of a successful operation for cleft palate, performed by Professor Deckmann, and which we extract from a late Number of Kleinert's Repertorium. It will to many readers have a peculiar interest, when it is understood that the narrator and the patient is one and the same person, and a member of our own profession.

"The patient had the misfortune to be born with a divided soft palate, by which malformation he was prevented, when an infant, from taking the breast. He acquired a nasal and indistinct tone of voice, and could not swallow when in a horizontal position, as the food, particularly that of a liquid kind, slipped into the trachea: at length he was unable to expire the air through his mouth, without at the same time closing up his nostrils. He accounted for this malformation by the circumstance that his mother, while pregnant, had been alarmed at seeing a man similarly afflicted exhibit his deformity by yawning.

"The palatine fissure was about one and a half inches in length, at the lower part three-fourths of an inch in breadth. It extended down to the uvula. The patient had undergone an operation in the year 1831: the adequate degree of adhesive inflammation, however, did not take place; the lips of the wound separated during a fit of sneezing two days after the operation, when only a small portion of the upper part had healed. The patient, however, underwent a second operation on the 4th of October. The margins of the fissure were removed with a cataract knife; the lower part of each margin being held with pincers. As soon as the application of cold water had arrested the bleeding, the ligatures were applied. These consisted of silk threads, of which two and two were twisted together, well waxed and afterwards pressed flat with the nail, to prevent their cutting. Three of these were found sufficient to unite the lips of the wound. Their application occasioned retching. The operator made use of Gräfe's needles; short and more curved ones for the upper, but longer and less curved ones for the lower ligature. They were applied with Gräfe's needle-holder, in such a manner as to penetrate from behind towards the front, and were then drawn out with a pair of fine nippers. The upper ligatures were applied first. Great inconvenience ensued from the continued influx of blood into the throat, which, together with an abundant secretion of mucus, occasioned frequent coughing and efforts to clear the throat. The patient having recovered himself a little, the operator proceeded to unite the lips of the wound. The upper ligature was first drawn together in a knot with the fingers, and then retained in its position by an assistant with the aid of pincers, whilst the two succeeding knots were accomplished in the same manner. The lips of the wound were now perfectly drawn together. The patient remained in an upright position, with his head bent a little forwards, and afterwards maintained a similar position in bed, in order that the saliva might flow off the more easily. He was much disturbed by a cough during the night and the succeeding day, but, by great attention, this had no influence on the movement of the palate. Whenever he coughed, he opened his mouth as wide as possible, bent his head forward, formed a hollow in his tongue with the concavity upwards, the point resting against the hard palate so as to press down the root of the tongue as far as possible.

"The inflammatory redness and the pain had somewhat increased; in other respects he felt perfectly well, with the exception of occasional but slight rigors. Nothing remarkable occurred the next day, except that a degree of languor ensued, and that the saliva had a bad smell and taste, probably owing to the total abstinence which the patient observed. On the morning of the fourth day the patient took food for the first time, consisting of the yolk of an egg and a small portion of milk. He now began to experience more hunger and thirst than during the preceding days. The latter sensation was allayed by frequently taking cold water into his mouth. The two upper ligatures were removed on the fifth day, the lower one on the seventh. This latter one had cut deeper than the rest, and had caused a corresponding degree of suppuration. The patient now ventured, with great caution, to speak, and at first only to whisper. He rinsed his mouth repeatedly with wine, to strengthen the still relaxed parts which had been operated upon. All distress in speaking and in swallowing at length entirely left him, and his speech became greatly ameliorated."

ART. VI.—*On the Medical Properties of the Natural Order Ranunculaceæ; and more particularly on the uses of Sabadilla Seeds, Delphinium staphisagria, and Aconitum napellus, and their Alkaloids, Veratria, Sabadilline, Delphinia, and Aconitine.* By A. TURNBULL, M.D.—London, 1835. 12mo. pp. 171.

IF one quarter of what is contained in this book be true, (and surely that is not an unreasonable requisition,) Dr. Turnbull's alkaloids are sufficient to change the face, not only of medicine, but of society. Here and there an eccentric annuitant might be found who would allow himself to be cut off by hypertrophy of the heart at fifty or sixty; but, the majority would keep a box of veratria ointment on their dressing tables, and live to eighty-six or ninety, to the dismay of the Atlas and the Globe. Dr. Turnbull, indeed, very modestly says

"The author would caution the profession against expecting too much from the employment of these remedies. In some cases they have given only a temporary relief, whilst in others they have had no effect: but generally speaking he has found them of much more advantage in the treatment of a very distressing class of affections, than any means hitherto discovered, and on this account he would recommend their use." (*Preface*, p. 6.)

This is just as if a guide were to introduce a traveller to the falls of Niagara with a caution not to be surprised. How can we expect too much from veratria, which, of nine cases of affections of the heart, is said to have cured or relieved all; of thirteen cases of neuralgia, to have cured twelve; of nine cases of rheumatism, to have cured eight, and almost the remaining one? The heart affections, moreover, were evidently cases of organic disease, though the author, with great humility, generally refrains from saying so: e. g.

"CASE IV. Mr. J., a clergyman, fifty years of age, has been affected with severe palpitation for the last seven years, accompanied by quickness and irregularity of the pulse, difficulty of breathing, loss of voice, cough, expectoration, and a distressing sense of anxiety: has sometimes been seized in the pulpit with giddiness, succeeded by throbbing in the neck and confusion of intellect, and these symptoms have occasionally gone on to such an extent as to oblige him to desist from his duties for two or three months at a time: his bowels are regular, and his digestion generally good.

"He was ordered to take small doses of tartar emetic, and to have a blister applied over the chest; and this treatment was pursued with considerable advantage for the time, but when it was remitted he soon returned to the same state as before. As this seemed a fair case upon which to make trial of the veratria, it was ordered to be rubbed on in the manner already described. By making use of the frictions once every night he became gradually better, and at the end of a week considered himself quite well; he was advised, however, to continue the ointment for a little longer, and then to leave it off by degrees: this was accordingly done about a year and a half ago, and he has remained ever since in excellent health, free from his old complaints, and able for the discharge of the functions of his office." (P. 39.)

Every case of neuralgia was perfectly cured, except one, and even of that the history concludes, in the text, with the words "leaving no trace of the affection behind, neither has any renewal of it taken place." (p. 70.) The note, however, a traitor to the text, says, "In this instance the veratria has completely failed in giving permanent relief," &c.

Dr. Turnbull also recommends veratria in gout, dropsy, and paralysis; but, in the last disease, he says, that tincture of sabadilla deserves the preference.

Delphinia, like veratria, is chiefly employed externally, and in the same diseases; and, as it can be applied to mucous membranes without inflaming them, is in some cases preferable for that reason; and, in others, for its property of exciting the circulation of the part to which it is applied. One case only is given in which it was employed, a facial neuralgia, which was relieved by veratria, but perfectly cured by delphinia.

Aconitine is employed externally, in the form of ointment, like veratria. A case is given of agonising neuralgia of the fingers, which, after having long resisted a variety of remedies administered by Dr. Elliotson, was cured by Dr. Turnbull with the tincture of the root of aconite and ointment of aconitine.

There is an appendix containing several cases successfully treated by the veratria ointment, and communicated to the author by Drs. Macgowan and Hood and Messrs. Holme, Spence, and Porter.

On the whole, we must come to this impartial but perplexing conclusion: if Dr. Turnbull's cases are fairly told, veratria (for the other alkaloids are of very secondary importance,) is the greatest discovery of the age, and Dr. Turnbull is the most skilful or most fortunate of practitioners; if, on the other hand, we are to trust to our own experience, (for we too have tried the alkaloids,) and to the experience of friends who have tried them much more extensively, the utmost that we can say in their favour is, that, like many of the medicines in daily use, they are at most if not of doubtful, at least of uncertain, efficacy. Sometimes they have done good, particularly in neuralgia; frequently they have proved of none effect: in no case that has come under our own immediate observation could we feel authorised, by the laws of legitimate induction, to pronounce more highly of their merits than of twenty other remedies, in the hands of every one, and long prescribed in the same diseases. Still we are far from saying that these alkaloids are valueless, or that they do not deserve the careful attention of the profession; neither do we regard Dr. Turnbull's efforts or Dr. Turnbull's book as claiming from his brethren unqualified contempt or censure. On the contrary, we believe in the efficacy of the drugs, and we are not unthankful to the author, who has taken much pains to make them known; but we condemn most unreservedly the careless, hasty, and unphilosophical manner in which the investigation has been conducted, and the blind and headlong zeal which has done its utmost to ruin the cause it would recommend, in the minds of all sober thinkers.

If veratria can stand the ordeal of such injurious partisanship,—at least in these our days,—it must indeed be a remedy of no mean virtue. We conclude by recommending such of our readers as have not yet made trial of these preparations, to do so, but with a more sedate mind and in a more critical spirit than the present publication evinces its author to have done; and to give the results as judges, not as advocates, careless for the name or fame of veratria, and solicitous only concerning truth.

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ART. VII.—*Ueber die Augenkrankheit, welche in der Belgischen Armee herrscht. Nebst einigen Bemerkungen über die Augenkrankheiten am Rheine, und über Augenblennorrhoeen im Allgemeinen.* Von J. C. JÜNGKEN, u. s. w.—Berlin, 1834.

*On the Ophthalmia which prevails in the Belgian Army; with some Remarks on the Eye-Diseases on the Rhine, and Purulent Ophthalmia in general.* By J. C. JÜNGKEN, M.D., Professor of Medicine in the University of Berlin, &c.—Berlin, 1834. 4to. pp. 51.

2. *Ueber die Augenkrankheit welche in der Kaiserlich-Russischen activen Armee herrscht.* Von ROMAN TSCHETIRKIN, M.D. &c. Aus dem Russischen, von DR. MAGAZINER.—Kalisch, 1835. 8vo. pp. 73.

*On the Ophthalmia prevalent in the Imperial Russian Army.* By DR. TSCHETIRKIN. Translated from the Russian by DR. MAGAZINER.—Kalisch, 1835. 8vo. pp. 73.

MEDICAL practitioners are generally aware that the purulent inflammations of the conjunctiva are the most destructive of all the ophthalmiæ. Many are deprived of sight in this country from the ophthalmia neonatorum; chiefly, we grant, from the disease being neglected. We have never seen a good statistical account of the effects of the Egyptian ophthalmia in the British army, during their abode in Egypt and after their return. We think it is Sir Robert Wilson who states that, before they left Egypt, 200 men had each lost one eye, and 160 were totally blind; an estimate probably much below the truth. We know on good authority, (that of Dr. Vetch,) that, in 1805, the 52d regiment amounted to somewhat above 700 men; that, from August 1805 to August 1806, 636 cases of ophthalmia occurred in that regiment, including relapses; and that, of these, fifty lost both eyes, and forty one eye each. Our readers, however, may well be astounded when we announce to them the fact, that, in the course of only a few years, no fewer than 4000 individuals belonging to the Belgian army entirely lost their sight from purulent ophthalmia, and 10,000 lost each one eye; all young soldiers, and all pensioned by the state.

The Russian army, about the same period, suffered in the same manner, but in a less severe degree, as we learn from the pamphlet of Dr. TSCHETIRKIN.

“The Russian garrison at Warsaw was for the first time invaded by the epidemic ophthalmia in the year 1818. The disease made its appearance upon the 1st of July, and from then till the 1st of October 1,106 had fallen victims to it. Since then it frequently occurred among the soldiers quartered in the Ordinatzkian barracks. In 1833, it attacked the second battalion of sappers, the Galitzkian and Kostromian regiments of chasseurs which lay in the Alexandrine barracks, and again the Polish recruits. The disease attained neither a great degree of malignity, nor was it remarkably contagious, and ceased in harvest after excessive rains. From April until the middle of August, 1833, out of 934 who were ill, ten lost their sight. The ophthalmia of 1834, however, was far more energetic, and reached a high grade of intensity in the garrison at Warsaw, particularly among the gens-d’armes and the Brankian regiment of chasseurs, quartered in the centre of the town. In the year 1834, the number of individuals labouring under ophthalmia in the active army was 8,000; of whom, thirty-five are permanently blind, some others have lost one eye. Of these latter, several recovered so far as to be able to distinguish certain objects. It did not entirely subside, but persisted during the winter of 1834-5, and was observed from time to time, particularly in the month of February.” (P. 2.)

A proposal was some time ago made to the Royal College of Surgeons of London, that they should exact from their candidates attendance on an Eye Hospital, and on a course of instruction in eye-diseases; but we believe it fell to the ground. We cannot conceive that, where the interests of humanity were so intimately concerned, such a result could have any reference to matters of finance. At any rate, the facts to which we have just adverted sufficiently prove the importance of the ophthalmological branch of medicine, and the necessity of exacting a knowledge of it from all licensed practitioners.

It was under the painful circumstances above stated that the Belgian government summoned a medical commission to meet at Brussels, for the purpose of investigating the causes and cure of the disease which had proved so destructive; and this commission Dr. Jüngken was invited to join. He set out from Berlin in February, 1834, and investigated the disease in the hospitals at Brussels, Ghent, Antwerp, Mechlin, and Louvain. The work now before us was written at Brussels, and distributed to the Belgian medical officers. There are some questions, both theoretical and practical, in which certainly we differ from Dr. Jüngken; but, on the whole, we consider this production as one of very great merit, and well deserving the study of British surgeons. The work of Dr. Tschetirkin was composed under somewhat similar circumstances. He is an inspecting physician in the Russian army, and was deputed by the medical staff at Warsaw to furnish an account of the ophthalmia there prevalent. It is also a work of merit.

Before proceeding to Brussels, Dr. Jüngken visited Mayence, Coblenz, Bonn, Cologne, and other places on the Rhine, where purulent ophthalmia had been prevalent for a series of years. At several of them he found a slight epidemic ophthalmia; more, however, among the inhabitants than among the soldiery. For many years the disease had reigned in the Catholic school for teachers (*Schullehrer-Seminar*), at Brühl, near Cologne, and at length reached such a height that the seminary was evacuated. It is while relating the circumstances of this school that Dr. Jüngken's acceptance of the term "Egyptian ophthalmia" first attracts our notice. He found, he tells us, granular conjunctiva in some of the pupils of the school, but no proof of an Egyptian ophthalmia. By this he means (as more clearly appears in the sequel,) a contagious ophthalmia propagated from person to person, and incapable of originating except from a specific poison, identical with that which attacked the British and French armies in Egypt.

Along the left bank of the Rhine, Dr. Jüngken met with very many individuals suffering under puro-mucous ophthalmia and its sequelæ. He considers those individuals to have suffered from catarrhal or catarrho-rheumatic ophthalmia, degenerating into blenorrhœal, which he acknowledges to prove often as dangerous as the true Egyptian ophthalmia.

In his introduction, which occupies twelve pages, Dr. J. remarks that, at a certain degree of severity, all the blenorrhœal ophthalmiæ not merely present similar, but actually the same symptoms, and produce the same consequences. If the disease is not speedily checked and removed, the conjunctiva becomes granular, and this after catarrhal ophthalmia, as well as after the Egyptian, the gonorrhœal, or the oph-

thalmia of new-born children. According to Dr. J., the granular projections on the surface of the diseased conjunctiva are mucous papillæ.

As to the causes of the ophthalmia which he met with among the military along the Rhine, he considers cold to have been the chief; the patients having been exposed to this while doing duty as sentinels. The greater number were taken into the hospitals directly from parts where they were exposed to cold, and in some cases they were so suddenly affected with the disease that it was necessary to relieve them before their time. In Coblenz, certain stations were particularly pointed out which were peculiarly productive of the disease; and the general opinion there was, that two-thirds of the patients in that town owed the disease to exposure of this sort.

Cold also, added to the inconvenient construction of the building, seems to have been the chief cause of the ophthalmia in the school at Brühl. The building was low and surrounded by stagnant water; the class-rooms were on the ground-floor, with no cellars underneath them, and the floors very cold. Besides, they were too small, compared with the number of pupils; so that the atmosphere within was bad. All the pupils remained for several hours continuously at their lessons; the upper parts of their bodies became heated, while their legs up to above the knees were cold. Close to the class-rooms lies a cold cloister, paved with stone and beset with draughts of air, into which the pupils pass immediately from the class-rooms, and which, in bad weather and unfavorable seasons of the year, forms the only place of recreation in leisure hours. The sleeping rooms in the uppermost floor are very mean, and contain too many beds. Immediately on awaking in the morning, the young people step out into a corridor, also beset with draughts of air, and there wash, not only the face but the whole head, and then go fasting into the church. For a year or two the bad effects of such influences were not so apparent: those whose general health had suffered from their residence in the school were most liable to the ophthalmia. Our readers are probably aware that the same ophthalmia which Dr. J. met at Brühl was long prevalent in Christ's Hospital in London.

Regarding the mode of propagation of purulent ophthalmia, Dr. J. observes that many erroneous views have been entertained. The contagious nature of the Egyptian ophthalmia is well known, but is universally ascribed (adds he,) to a specific poison, which many erroneously suppose may remain for years in the person without losing its contagious power. Dr. J. probably refers to the fact, that a patient labouring under granular conjunctiva, a sequela which often lasts for years, is liable to relapses, during which purulent mucus is again discharged from the conjunctiva, and most assuredly will excite a similar ophthalmia, if applied to a healthy eye. Dr. J. is aware that the ophthalmia neonatorum is in a high degree contagious, producing the same disease in adults by the casual application of the discharge from the eye of the infant.

The following we regard as an important observation: Dr. Jüngken has not unfrequently met with cases of female children, who, in consequence of ascarides or of scrofula, laboured under a mucous discharge from the vagina, and who, by conveying accidentally some of this to the eyes, have brought on purulent ophthalmia, which, both in progress and

severity, was exactly similar to a gonorrhœal inflammation of the conjunctiva. In one instance of this sort, the disease originating thus in a child, seven individuals of a family were affected one after the other, and their eyes greatly endangered.

Even those mucous ophthalmiæ which originate in catarrhal or catarrho-rheumatic inflammation of the eyes are not less contagious, according to our author, but spread by transmission of the secretion from one person to another, especially in the crowded abodes of the poor.

Dr. J. is of opinion that the contagiousness of purulent ophthalmia is nowise dependent on the nature or cause of the disease, nor on any specific poison, but on the degree of its development and the severity of the symptoms. With these, he says, the contagiousness rises and falls. The more severe the symptoms, and the more rapid the progress of the complaint, the more contagious does it become. Purulent ophthalmiæ of rapid course exercise their contagious power even on the healthiest eye, if this is touched by the secretion; they lose this activity in proportion as the inflammatory symptoms subside. If these are gone, and only a mucous discharge remains, this proves injurious only to eyes in a state predisposed to disease.

With regard to the quality of the secretion, this is so much the more virulent the more nearly it resembles laudable pus in consistence and colour. When it does so, the very smallest quantity will inoculate the healthiest eye. The more the secretion recedes from pus in colour and consistence, and assumes the appearance of a mild mucus, like white of egg, and is diluted with tears, the more it loses the contagious power: it affects no longer the healthy eye it may happen to touch, and exercises its contagious power only on such eyes as are in a very irritable state, perhaps already slightly inflamed, and thereby strongly predisposed to disease. The granular condition of the conjunctiva is symbolic of the malignancy of the affection, indicating that it is still endowed with the faculty of transmitting the infection to sound eyes. This important fact is fully established by the observations of the Russian military surgeons in 1834.

The predisposing causes may be either constitutional or individual. The constitutional predisposition is most frequent during the prevalence of east or north-east winds, during rapid changes of temperature and weather, in seasons of great heat, and under a thundery atmosphere. The individual predispositions are scrofulous or abdominal disorders, and the causes productive of congestion and irritation about the head and eyes.

Dr. Jüngken closes his introductory remarks with a reference to the analogy between the purulent ophthalmiæ and gonorrhœa. They are analogous in their nature, symptoms, course, consequence, and mode of treatment. "As in gonorrhœa," says he, "the appearances of inflammation must be regarded merely as symptoms, which increase and decrease with the rise and fall of the disease, and may even entirely vanish, while the specific complaint, the flow of mucus from the urethra, continues; so it is with the appearances of inflammation in the purulent ophthalmiæ. They indicate the degree of severity of the disease, and may totally disappear, while the granular state of the conjunctiva and increased flow of mucus continue. That, in the treatment of a gonor-

rhœa, besides the greatest attention to cleanliness, the setting aside of the inflammatory appearances is the chief object; and that, previously to the total subsidence of these, all local applications to the urethra, of whatever sort, and especially all stimulating, irritating, astringent, and similar means, cannot be suffered, and will decidedly prove hurtful, is known to every well-informed practitioner. The same holds with regard to the treatment of purulent ophthalmia, only in a yet higher degree; inasmuch as the eye is a much more sensitive organ than the urethra. And yet, alas! how many cases of purulent ophthalmiæ are treated from the beginning with topical means, and often with means of a contrary tendency to what is expected, entirely from the greater number of practitioners having adopted the preconceived and unfortunate opinion that eye-diseases are especially confined to the organ affected, and therefore ought to be treated with peculiar local means; an opinion which robs thousands of their sight." (P. 11.)

In these remarks there is much truth, mixed, we think, with a considerable share of error. That many eyes are lost in the purulent ophthalmiæ from trusting entirely in applications to the conjunctiva, and that many a surgeon has put out the sight of his patient with *liquor plumbi acetatis* when he meant thereby to save it, we have no doubt. We believe, however, that, to trust to antiphlogistic treatment alone, and to overlook local applications, would also be highly dangerous. We are convinced that the most successful treatment of this class of the ophthalmiæ requires a combined use of different and even opposite means, of general with local applications, of soothing with smarting, of means likely to moderate the flow of blood into the inflamed parts with means fitted to excite a new action in the diseased membrane.

That part of his work which refers to the Belgian ophthalmia, Dr. J. arranges under the heads of Nature, History, Causes, Prognosis, Prevention, and Treatment.

With regard to its nature, it cannot be doubted that it is the same disease which prevailed epidemically in 1813, 14, and 15, in the Prussian armies, which is endemic in Egypt, in the whole of the Oriental countries, the south of Italy, Calabria and Sicily, and in the south of Spain, and which attacked the French and English armies during Napoleon's campaign in Egypt.

Dr. Jüngken considers the granular state of the conjunctiva as the chief and essential symptom. We certainly agree so far with him in believing that, till this symptom be overcome, the disease must be regarded as still existing; and we must say, that the discharging of soldiers with granular conjunctiva, consequent to a first attack of the ophthalmia, is scarcely less indicative of ignorance than of cruelty. An opposite error, however, appears to have prevailed in the Belgian army. "The chief cause," says Dr. J., "through which the disease continues to prevail in this army, and through which it ever and anon reappears, is that there remains in the ranks a considerable number of soldiers in whom the disease is not completely extinguished, but is only smothered: in whom the inflammatory phænomena indeed have disappeared, but the state of granular conjunctiva continues." He farther states that, among the troops which he examined, he did not find a company in which there were not several individuals (sometimes six, eight, or more,) affected



with granular conjunctiva; and that, in the whole army, there might be several thousands so circumstanced. If such individuals are exposed to the slightest over-exertion, or indulge in the slightest intemperance, the ophthalmia is immediately renewed: under repeated relapses thus brought on, vision is lost, and the disease goes on to attack new subjects.

We perfectly coincide in Dr. J.'s views of the origin of the ophthalmia in the Belgian army: that it was no product of a poison brought from Egypt, but that it arose solely from recent and local causes,—such as exposure to cold during the night, especially after extreme heat during the day; forced marches; excessive fatigue; sentinel duty; tight uniforms, and especially tight collars, &c. Dr. J. seems to consider an easy, loose uniform, without any tight binding upon the neck, as peculiarly adapted to prevent soldiers being attacked by the ophthalmia, and with reason asks, what we should say were it proposed to oblige sailors, husbandmen, and others, to perform their several kinds of labour in the tight uniform in which a soldier is forced to perform his?

Dr. Tschetirkin's experience as to the origin of the disease in the Russian army coincides very closely with that of Dr. Jüngken. He tells us that the epidemic followed in the wake of the influenza of 1833. It was of catarrhal origin, and seemed to denote a peculiar morbid atmospheric condition. Hence persons much exposed to atmospheric vicissitudes were most liable to be attacked. Many soldiers who escaped ophthalmia suffered from diarrhœa. Among the local circumstances that favoured its development in Warsaw, the elevated situation of the place, the sandy soil, lofty houses, with foul and narrow streets in which the air was never properly renewed, are to be reckoned. Soldiers were especially predisposed, from barrack malaria, exposure of the eyes to dust, to an air loaded with moisture from the wet clothes hung up to dry, and to the glare of burnished firearms on parade.

The minute enumeration of the predisposing causes by Dr. Jüngken we would earnestly recommend to the perusal of those intrusted with the direction of medico-military affairs.

We cannot agree with Dr. Jüngken in his notions regarding the secretion from the conjunctiva. He thinks it becomes "corrosive, so that, at the greatest height of the disease, it operates very destructively, exactly like quicklime." He supposes it is the secretion which forms the large ulcers on the cornea, and thus destroys the eye. Now, the ulcers are, to our view, merely the effect of the severe inflammation, and we have no evidence of the discharge possessing any corrosive property. However this may be, to remove the discharge thoroughly and frequently from the eye is a point of practice regarding which there cannot be two opinions. Dr. J. recommends this to be done with lukewarm water, decoction of mallows, or infusion of henbane or belladonna, applied by means of the sponge or the syringe.

Dr. Jüngken very properly scouts the idea of any specific remedy for purulent ophthalmia. His practice, on the whole, we consider as judicious, embracing as it does the following particulars: 1. Plentiful venesection; leeches behind the ears; arteriotomy after venesection, or as a substitute for leeches. 2. Purging, especially with calomel. 3. Friction of the brow and temple with mercurial salve and opium. 4. The internal administration of *aqua lauro-cerasi* and of nitre. 5. Excision

of a fold of chemosed conjunctiva. 6. When the pain and swelling have subsided, a solution of one grain of corrosive sublimate in ten or twelve ounces of water, or of two grains of *lapis divinus*\* in six or eight ounces of water, to be dropt into the eyes every six hours or oftener. 7. When all inflammation and unnatural sensibility of the eye are removed, solutions of zinc, nitrate of silver, and the like.

The last two sets of remedies Dr. J. is too late in commencing. Much advantage is derived from the solution of nitrate of silver in the form of drop, and from that of corrosive sublimate as a lotion, even from the very commencement of the disease. Dr. J. appears also to neglect the use of counter-irritation till the symptoms assume a chronic form.

The treatment laid down by Dr. Tschetirkin is also, on the whole, vigorous and judicious. After free depletion, calomel, in doses of one or two grains every two or three hours, was found beneficial: when symptoms of iritis were present, the calomel was exhibited in combination with digitalis or extract of henbane. The ordinary practice was occasionally deviated from, and with a happy result.

From the close analogy subsisting between ophthalmo-blenorrhœa and gonorrhœa, and from the conjunctival corresponding with the urethral mucous membrane in structure as well as in sympathy, Dr. Reinhard bethought himself that the remedies which answered in the one case might also succeed in the other: he therefore administered, in the early stage of the purulent ophthalmia, after abstraction of blood, the *mistura gonorrhœica* of Delpech, (a combination of capivi,) and that, it is said, with the most beneficial results.

An assistant surgeon, Dr. Belousowitsch, laboured for several months under a masked intermittent fever, which latterly observed monthly paroxysms. From the 1st April, 1835, instead of the ordinary febrile phenomena, he was affected every evening with inflamed eyelids, together with violent pain in the eye. During the seizure the pulse, at first full, became afterwards accelerated; the appetite failed; and the urine yielded a furfuraceous sediment. Assuming the palpebral affection to be of the nature of ague, Dr. B., after due evacuation of the bowels, took inwardly quinine in union with cinchona and opium, and bathed his eyes with a wash containing two grains of sulphate of quina in two ounces of distilled water. The good effects of this treatment were remarkable. The inflammation of the eyelids rapidly subsided, and was entirely gone in four days. He adopted the same line of practice in a number of cases of purulent ophthalmia subsequently with great advantage, where the pain observed periodic remission and exacerbation, and when the urine was turbid.

Granular conjunctiva Dr. J. treats with nitrate of silver, pyroligneous acid, chloride of lime, and even sulphuric acid; and recommends exercise out of doors. He snips off the granular projections with the scissors. The practice of Dr. Tschetirkin was to destroy the granulations by repeated cauterization with lunar caustic or bluestone. When the escharotic could not be applied in substance, its solution was employed. An ophthalmological friend, in whose observations we have great confi-

\* *Lapis divinus* s. *ophthalmicus*, ex vitrioli, nitri et aluminis partibus anasticis, addita camphora, paratur. *Blancard. Lex. Med.*—Ed.

dence, informs us that the projections called granulations of the conjunctiva, are, in most cases, small cysts or vesicles containing a thickish mucus. The treatment he has found most successful is the making of a small crucial incision with the lancet through each of the prominences. These minute scarifications are to be repeated every second or third day; while daily a small bit of strong red precipitate salve is to be put into the eye, rubbing the upper eyelid over the eyeball, so as to diffuse the salve over the inner surface of the eyelid. We have tried this practice, and have found it successful.

Both the works we have noticed are valuable; but that of Dr. Jüngken is very superior to the other, and possesses much more of an original character. The style is clear and perspicuous; unlike most German writings, the pages are not interlarded with references and quotations; the facts are extremely interesting and important, and the reasonings careful and in general correct.

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ART. VIII.—*A Dictionary of Terms employed by the French, in Anatomy, Physiology, Pathology, Practical Medicine, Surgery, Midwifery, &c. &c.; with their Derivation from the Greek and Latin; their Synonyms in the Greek, Latin, French, German, and English; and Illustrations in the different Languages.* By SHIRLEY PALMER, M.D. Parts I. and II. (A.—Hui.)—Birmingham, 1836. 8vo. pp. 320.

THIS is an extraordinary book in various ways, and surely of extraordinary merit. It is founded on the well-known and very useful "*Dictionnaire des Termes de Médecine, Chirurgie, &c.*" compiled by MM. Begin, Boisseau, &c., published in Paris in 1823, and is indeed, in a considerable degree, a translation of that work, but with many additions and improvements. The most valuable and striking of the improvements is the introduction of the German and English synonymes of the greater number of the terms; but there are many others also, all calculated to render the work very superior in value and usefulness to the French Dictionary.

To gentlemen who are studious of the varied and voluminous literature of our neighbours, and particularly to those who are only commencing the study of it, this work will be truly invaluable. Whether, in making his dictionary essentially a *French* one, by selecting his alphabet and his vocabulary from that language, Dr. Palmer has consulted the interests of medical readers generally, or the utility and popularity of his work, is a different question: there can be, at least, no doubt that, for the readers of French medicine and French science, the present form of the publication is the best possible, and to all such the book itself is really indispensable.

As an illustration of the manner in which the author has executed his task, we shall extract a short passage from the second Part, just published, which will enable us to point out what we regard as defects in the general plan of the work.

"COXAL, adj.—coxalis (*coxa*, haunch or hip), L.: an epithet, in Anatomy, applied by Chaussier to the *haunch* or *hip-bone*,—*os coxal*,—*des hanches*,—*des iles*,—*ilague*,—*innominé*, F.,—*os coxæ*,—*ilii*,—*innominatum*, L.,—*hüftbein*, das ungenannte bein, n, G.; [composed, in early life, of three distinct pieces,—see ILION, ISCHION, PUBIS; each developed by one principal and several minor points of ossification.

These pieces unite in the cotyloid cavity, to the formation of which they contribute in different proportions; and constitute, in the adult, one bone. The *os innominatum*, articulated anteriorly with its fellow bone, posteriorly with the sacrum, and with the femur below, occupies the anterior and lateral parts of the pelvis: and, if the *Gemini* are regarded as two, and the *Triceps adductor femoris* as a single muscle, each bone affords points of attachment to thirty-five muscles.]

"COXALGIE, s.f.—coxalgia, f. L. (a barbarous compound of the Latin *coxa*, haunch, with the Greek *άλγος*, pain),—hüftweh, n. G.,—pain in the hip: in Pathology, an affection almost invariably symptomatic of rheumatism, gout, inflammation, or organic lesion of the hip-joint. COXALGIQUE? adj.,—coxalgius, L.,—an *coxalgie* leidend, G.,—coxalgi: suffering from *coxalgy*. By some Latin writers, it has been proposed to apply the term *Coxitis*, s.f.,—*coxite*, f.} F., to active inflammation,—*hitze entzündung des hüftgelenkes*, G.,—of the hip-joint.

"COXARTHROACE, s.f. (*coxa*, the hip,—*ἄρθρον*, joint,—*σαρξ*, faulty: in Pathology, *caries* of the *coxo-femoral articulation*.

"COXO-FEMORAL, adj.—coxo-femoralis, L.: an epithet applied, in Anatomy, to the articulation,—*art. coxo-femorale*, F.,—hüftgelenke, G.,—formed by the reception of the head of the *femoral* into the cotyloid cavity of the hip- or *coxal* bone. This articulation, designated also the *ilio-femoral*,—*ilio-femorale*, F.,—[is maintained by a very strong capsular ligament extending from the circumference of the cotyloid cavity to the neck of the femur; by a round inter-articular ligament, which passes from the cotyloid notch to be inserted into a depression in the summit of the head of the femur; and by the fibro-cartilaginous rim,—see *COTYLOIDE*,—which tips the margin of the acetabulum, and converts the notch into a foramen.]

"CRABE, s.m.: a genus of *Marine Crustacea*, *Cancer* (*Malacostraca*, *Decapoda*, Cuv.,—*Podophthalma*, Leach), L.,—der krebs, G.,—the Crab,—[comprising many species; the body and ten limbs of which are covered with an articulated crust, annually renewed.] Two of these species,—*C. mænas*,—*crabe ordinaire*, F.,—*καρκίνος*,—common crab, and *C. pagurus*,—*cr. tourteau* ou — *poupart*,—*πράγουρος*,—[black-clawed crab, or punger, afford a grateful, nutritious, and stimulating aliment, greedily sought after, but in certain conditions, either of the animal itself or of the individual feeding on it, not always taken with impunity; and quite inadmissible in congestive or inflammatory states or affections of the system.] The calcareous covering of the latter animal, [which, like the concretions obtained from the stomach of a species of *Astacus*, consists principally of carbonate of lime, with a minute proportion of the phosphate and gelatine,] was formerly employed in medicine, under the title of *crab's-claws*,—*Cancrî paguri chelæ*, L.,—*die krebs-scheeren*, G.,—as an *antacid* and *absorbent*. All the species which now constitute the genus *Astacus*,—see *E'CREVISSE*,—were originally arranged, by naturalists, under *Cancer*." P. 172.

In the above extract all the brackets are our own, and we have inserted them to indicate what appears to us to be superfluous in a dictionary of terms, and therefore injurious, by adding unnecessarily to the matter and expense. And this we regard as a radical defect in Dr. Palmer's plan, as the same superfluity of explanation runs through the whole work. Not that we have any fault to find with the lengthened definitions and explanations, as such; as they are, for the most part, not only unexceptionable, but really superior to most others which we have met with, both in precision and conciseness; but because we regard such as altogether misplaced in a work like the present. To non-professional and unscientific persons, indeed, they may be useful, (and for these the book is not intended,) but to the whole class of professional and scientific students they must be either superfluous, as teaching what they know already, or insufficient, as attempting to convey what can be readily and more fully obtained in other works, and what must be next to useless in the scanty amount here given. The very considerable space occupied by these

explanations adds greatly to the size and consequent expense of the work, and probably also is one cause of certain parts of the plan being less developed than we think is desirable. This last remark applies more particularly to the German synonyms, which are certainly omitted in many places where they ought to appear, particularly when they happen to be adjectives.

We cannot help wishing that Dr. Palmer had made his work primarily an English instead of a French dictionary; that is, had adopted the English alphabet and vocabulary in place of the French. By so doing, we think he would have produced a more useful book for his own countrymen, and, we are assured, one infinitely more popular. He could, on this plan, have introduced equally well his foreign synonyms; and, by adding to the catalogue of English vocables such French or German words as have no synonyms in English, he could have always had opportunities of giving his definition and synonym (where it existed) of every term. This defect might be supplied to the English reader by giving an alphabetical index of the *English* as well as of the *German* words; and this is absolutely necessary, to render the work useful as a book of reference to the English student. We insist the more on this point, because we see announced in the advertisement that there will be published with the last part an "Index of the *German* terms," and no mention made of an English one: the learned author must by no means omit what will be so very important—indeed so essential—an addition to his work.

The daily increasing taste for, and knowledge of, the continental languages, among the members of our profession, makes the attempt to facilitate the perfect understanding of them most praiseworthy. We are sure that the task undertaken by Dr. Palmer could not have fallen into more able hands; nor could the plan he has laid down have been better executed than in the work before us. We have, however, been long of opinion that a work on a more simple yet more comprehensive plan than any at present existing is needed in the actual state of medical literature; and we may take this opportunity of stating that the writer of this article has, in conjunction with some of his continental friends, been arranging the outlines of a plan for the construction of a work, which, it is believed, will exceed, as well in accuracy as in completeness, any thing of the same kind hitherto undertaken. We refer to a Dictionary of Medical Terms, with the synonyms in all the principal European languages, ancient and modern; the synonymy of each modern language being drawn up by a physician of the country. The work will contain no definitions beyond what are absolutely necessary for identifying the terms; and, on this account, notwithstanding the voluminous synonymy, it is hoped that it will be neither of great extent nor very expensive. Its value to medical scholars will be admitted by all. The languages intended to be comprehended in this work are the following: Greek, Latin, German, Danish, Swedish, Polish, Russian, Dutch, English, French, Italian, Spanish, and Portuguese.

We conclude by recommending Dr. Palmer's work to every student and to every practitioner who reads, or who wishes to learn, the French and German languages.

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ART. IX.—*Traité Théorique et Pratique sur les Altérations organiques simple et cancéreuses de la Matrice.* Par F. DUPARCQUE, D.M. &c. &c.  
—Paris, 1835. 8vo. pp. 486.

*A Theoretical and Practical Treatise upon simple and cancerous organic Alterations of the Uterus, &c.*

ABOUT three years ago the Royal Medical Society of Bordeaux proposed the following question for their prize essay; and to M. Duparcque's treatise was awarded not only the prize, but the very warm approbation of that learned body, for the practical information he imparted upon a subject of no ordinary difficulty.—“To establish the diagnostic characters of different indurations and ulcerations of the neck and body of the uterus: to point out the best mode of treatment for each of them, and to state the cases which require extirpation of the diseased parts.”

In this country, prize essays are generally, if not always, the productions of intelligent students, who have read much, and seen but little; but, on the Continent, men of considerable experience do not consider it beneath them to compete for prizes offered by medical societies. M. Duparcque, for example, has evidently had great experience in diseases of the uterus, and he draws principally upon his own resources for the practical illustrations with which his work abounds.

The treatise is divided into two parts. In the first, a rapid sketch is given of the exciting and predisposing causes of chronic diseases of the uterus in general. The origin, and progress of, and the influence of medical treatment upon these diseases, is next considered. The second part contains a separate account of each chronic disease of the uterus, and of cancerous affections; and, lastly, a critical survey is taken of the surgical treatment of cancer of the uterus. M. Duparcque first states briefly and correctly the well known fact, that until the period of puberty the uterus appears to be, as it were, neglected by nature. But, at that important epoch of female life, it almost suddenly becomes exposed to various derangements of function, and various organic diseases, from which it was previously protected by its comparatively inert and passive condition. Five cases are related of chronic diseases of the uterus occurring in virgins, and commencing with suppressed or painful menstruation. Local and general bleeding, warm baths, &c., slowly restored these patients to health. The fourth case is interesting, inasmuch as it shews, that in young females who have never been impregnated, the uterus may, from a simple state of congestion, become so much enlarged as to lead to the suspicion of pregnancy, and that collections of feces in the large intestines may also create much perplexity to a young practitioner. A girl, æt. fifteen, had menstruated for several months, but before each menstrual period she suffered considerable pain in the hypogastrium, which disappeared when the flow of menses took place. In consequence of her being greatly alarmed, the menses were suppressed, and from this time she suffered from great pains in the belly, frequent vomiting, loss of appetite, &c. Her state became serious, and our author was consulted. Upon examining the abdomen externally, he felt behind the pelvis, and in the hypogastric region, a tumour inclined towards the right iliac fossa, which resembled by its position, form, and volume, the uterus at about the fourteenth week of pregnancy. The tumour was

hard, and slight pressure upon it caused pain. In the left iliac region was another tumour, of an irregular oblong shape, and partly within the pelvis. Pregnancy was suspected. No satisfactory examination, per vaginam, could be made, in consequence of these tumours. Upon attempting to examine by the rectum, the finger could not pass further than the sphincter, as the gut was filled with hardened *fæces*. The patient had now the ordinary symptoms of inflammatory fever: sixteen ounces of blood were taken from the arm; and the rectum was emptied with the handle of a spoon; after which free evacuations were procured by castor oil, and warm injections. The next day there was no tension of the abdomen; the tumour in the left iliac region no longer existed; but the hypogastric tumour remained of the same size, and now appeared more exactly placed on the median line, and within the pelvis. Upon examining, at the same moment, with the index-finger of the right hand in the rectum, which was now empty, and the left hand upon the hypogastrium, M. Duparcque was convinced that the tumour consisted of an enlarged uterus.\* The size of the uterus, taken in connexion with the time that had elapsed since the patient had menstruated, confirmed the suspicions of her being pregnant; but, in the case of this young female, there were many reasons for believing she was not pregnant. As she had menstruated, no retention of the menstrual fluid within the uterus could be imagined, and M. Duparcque concluded that the increased size of the uterus was caused by a gorged state of the tissue of the organ; and that she had at first laboured under chronic inflammation of the uterus, which had now become more active. The severe pains she felt, on the slightest pressure, strengthened this opinion. VS. to 3xij. Next day, twenty leeches to the hypogastrium, which was covered with emollient poultices. Hip bath. Four days afterwards, the tumour in the hypogastrium was much less, and the general symptoms of inflammation had subsided. Pains diminished. Twelve more leeches were applied, and the other remedies continued. In a few days more, the tumour was scarcely to be felt; in about a month, the patient menstruated freely, and her health was completely re-established.

In many points of view this case is interesting, and especially so from the increased size of the uterus in a very young female, from mere congestion, notwithstanding the natural firmness of its tissue.

We find a remark at the end of the detail of the sixth case, which is practically important. For some time after labour, the uterus remains more or less enlarged, and its tissue is engorged with blood; as it is then increased in weight, it may sink towards the vulva, or there may be prolapsus uteri. The relaxation of the vagina as well as of the ligaments of the womb, the consequences of pregnancy and labour, favour this occurrence. If, under these circumstances, the practitioner regards only the displacement of the uterus, without bearing in mind the cause which produces it, and applies a pessary, he does mischief, as the foreign

\* The patient was, no doubt, placed on her back, the customary position on the Continent during such examinations, as well as during labour, and certainly, in many cases, the most convenient. If, for the purpose of making such an examination, the patients were placed on the left side, the left index-finger would be introduced into the rectum, while, with the right hand, the uterus would be examined and supported externally.—

body increases the irritation and flow of blood to the uterus; and thus the foundation may be laid for more serious disease; when small local bleedings, and rest in a horizontal posture, would quickly relieve the patient. M. Duparcque tells us he has known this mistake very frequently committed, by the most celebrated physicians. This we should hardly have thought possible. It is the blunder of carelessness or inexperience.

Upon one subject we perfectly agree with our author. We are quite sure that at least half the fears that books would teach us to apprehend at the "critical age" of women, are more imaginary than real. That at that period certain diseases, which had hitherto remained in a latent state, may assume a more active course, we do not deny; but that any maladies owe their origin to any change that then takes place in the female constitution, we very much doubt. In confirmation of this opinion we may observe, that from very extensive statistical researches made by Moret, Finlaison, and Chateauneuf, it is proved that as many men die, as women, between forty and fifty years of age.

"In forty women," says the author, "of forty or fifty years of age, who were affected with cancerous diseases of the uterus, there were only five in whom the disease had recently appeared. In thirty-three there had been long standing derangement of the menstrual function; dysmenorrhœa, with symptoms of uterine disease, either depending upon labour, miscarriage, or accident. In two cases, which are shortly related, the disease appeared to have been gradually forming from the age of puberty."—"It may be laid down, then, as a general rule, that the 'critical age' is only dangerous to those women who arrive at that period of life with some already existing, but perhaps latent, disease of the uterus."

In this doctrine we fully concur.

The tenth and eleventh cases are examples of great organic disease of the uterus, without any derangement of the general health which could have led to the suspicion of the existence of such a malady. Such instances are by no means rare, and we believe it is pretty generally known that both the ovaria and uterus may undergo almost any extent of organic destruction or alteration, and yet no symptoms exist indicative of such disease. Let us observe, however, that in many of these cases a careful examination of the patient will lead us to detect that which the indefinite nature of her symptoms and complaints might conceal from us.

A young French lady was placed under our care; she complained of nothing but pain in the back, and sickness at the stomach. Her spirits were good, and no apprehensions had existed either in the mind of her medical attendant or friends. "Rheumatism; with a disposition to tic douloureux of the back," was the title her disease had received. But her countenance spoke more correctly than her tongue, and presented every appearance of organic, and especially of uterine disease. Still she complained of nothing but the "rheumatism" in her back. Upon laying the hand upon the abdomen, two large tumours were felt in the region of the ovaria, which were somewhat tender on pressure, but of the presence of which she had not before been conscious. There was also a small indolent tumour in the breast, and others of different size were scattered over the abdomen. The case was clearly one of malignant disease, and the friends were warned that in all probability it would terminate fatally. In about three weeks the patient died; the ovarial



tumours having taken an inflammatory action. Upon dissection, both the ovaria were found converted into masses of fungus hæmatodes, and incipient traces of the disease were also apparent on the peritoneal coat of the intestines. Connected with this case, were some other points of much practical importance, but we have entered fully enough into it for our present purpose,—namely, to warn the young practitioner not carelessly to pass over complaints which women may make of severe and long-continued pains in the back and groins, with or without sickness at the stomach. It is true that such symptoms may very frequently depend upon some trifling and passing cause, but they are, not unfrequently, the only signs which attend severe organic disease of the uterus or its appendages, and therefore should never be neglected, if we would avoid the risk of giving erroneous opinions.

The second chapter of the work describes the formation, development, and termination of diseases of the uterus in general. We extract one remark, for the sake of its novelty. The accuracy of the doctrine it inculcates appears to be very questionable.

“It is proved, by an exact account of the operations for cancer performed in the Parisian hospitals during a certain number of years, that relapses are less to be feared in proportion as the disease is of long standing, from whence it may be concluded, contrary to the general opinion, that, so far from hastening the performance of the operation, it is more judicious to wait, until the disease has, as it were, exhausted its power upon the affected organ. It may be added, that by gaining time, we arrive at that age when the vital or organic modifications which constitute the essential predisposing conditions to cancerous diseases are changed or disappear, and that then the disease, confined in future to the part originally attacked, will be no longer disposed to recur, or to form a cancerous diathesis.”

Facts like these must come before us in a more satisfactory manner, before we enquire into the solidity of the hypothesis which is brought forward to explain them. At present, without, we hope, being pertinaciously attached to a creed because it has age to recommend it, we must advise the speedy extirpation of cancerous disease, whenever it is practicable, and should not hold the surgeon justifiable who would wait for the aforesaid “change or disappearance of the vital or organic manifestations” to fix the residence of so formidable a foe as cancer.

In the chapter pointing out the best mode of examining patients, for the purpose of detecting uterine disease, the student will find many very useful hints. In this country, examinations by the rectum, by which we can so well ascertain, through the thin coats of the intestine, the form of the cervix uteri, the extent of disease in it, and the condition of the posterior surface of the organ, is too much neglected. In France the speculum is used with the greatest freedom and frequency, and no doubt it often gives the practitioner more decisive information than can be obtained by the most dexterous internal or external manual examination. In the use of this instrument but little pain is given in most cases, but the mental pain which most women must suffer from its employment will probably prevent it from ever being commonly used in this country. For the performance of certain operations on the uterus the use of the speculum is absolutely necessary.

In the second part of the work M. Duparcque treats, in different chapters, of each organic disease to which the uterus is liable, and of every

form of uterine disease cases are given to illustrate their progress, and the effects of remedies. We shall not enter into the detail of these cases, but confine ourselves to the chief practical remarks. The author observes that it is by no means uncommon to find the cervix uteri studded with fleshy growths of different form and consistence; their development is generally slow, and their presence causes no particular disturbance. Portal makes the same remark. He found these growths on the cervix uteri in many instances, and their existence had not been suspected during life. These tumours are generally insensible, soft, and bleeding, and give rise to a moderate sero-mucous discharge. Sometimes they increase to a very large size, become firm, and are attended with a profuse serous, mucous, or bloody discharge. And in this state they are not unfrequently, according to Breschet, mistaken for cancer.

If there is any one practice more frequently abused, and more empirically employed, than another, it is that of the indiscriminate use of astringent medicines, or injections in cases of uterine hemorrhage. Upon this subject M. Duparcque gives a useful lesson. The use of astringents in cases of uterine hemorrhage demands especial care. It is true they may suppress the discharge, but they do not always diminish the cause which gives rise to it. During the employment of astringents a congested state of the uterus may not only continue, but be positively aggravated. And most physicians must have seen cases in which acute inflammation of the uterus was provoked by the use of astringent remedies. Their use then should not be ventured upon until, 1st, any local determination of blood to the uterus has been relieved by proper treatment; 2d, or until the hemorrhage appears to be the result of atony, or relaxation of the tissue of the uterus, and there is no proof that the capillary circulation is too active. When uterine hemorrhage has continued for some time, and general debility is produced, then cold and astringents are powerful remedies. M. Duparcque thinks well of the ergot of rye in cases of hemorrhage which arise from a congested state of the uterus. We have always been of opinion that the attempts which have been made to establish a diagnosis between different diseases of the uterus, by attending to the nature and appearance of the "discharges" were at least very fanciful, and we find the author agrees with us. "The discharges from the vagina can form no diagnostic mark of the existence or nature of induration of the uterus." Of one remedy, which is much extolled, we ourselves know nothing; but our list of diuretic remedies is so scanty that we must not omit to add to it upon the respectable authority of M. Duparcque: In a case of ovarial enlargement, with considerable effusion, he was on the point of puncturing the abdomen, when he determined to try the *Pareira brava*, the powerful diuretic properties of which he had before ascertained. He gave it in the form of decoction, two ounces to a pint of water, reduced to a third by boiling. "So active were the effects of the remedy that no other treatment was required. After a few cups of the decoction had been given, the urine flowed in extraordinary abundance: a large chamber-pot being filled twice or three times in the twenty-four hours. The patient soon recovered.\*

\* The *Pareira brava*, like many other remedies, has been praised, neglected, and praised again. Helvetius regarded it as an excellent lithontriptic, and was certain that

M. Duparcque directs our particular attention to the practice of applying leeches to the cervix uteri. He affirms that he has derived the happiest effects from it in cases of induration of the fundus or cervix uteri, even when every symptom rendered it probable that the disease was of a schirrous nature, and had before resisted all ordinary treatment. "The rapidity with which resolution took place afterwards has been such as should have been witnessed in order to guard us against the imputation of excessive partiality for the practice, or exaggeration of the facts. The first effect of the application of leeches to the cervix uteri, which constantly takes place, even if the disease is of a cancerous and incurable nature, is to calm, as if by enchantment, the violent pains in the back, and those painful symptoms which are the ordinary accompaniments of organic diseases of the uterus. The number of leeches must be proportioned to the degree of induration, the severity of the local inflammation, and the strength of the patient. This mode of abstracting blood produces much less debility than general bleeding, and may therefore be employed when the latter would be prejudicial, as for example, in the last stage of cancer. The most dreadful symptoms of cancer of the uterus result less from the disease itself, than from inflammation, which it causes. Thus schirrous tumours, like softened encephaloid masses, do not ulcerate until inflammation has taken place. And it is at this period that those dreadful pains arise which characterize the progress of cancer, and perhaps for the first time denote their existence. In these cases, leeches applied to the tumour arrest the process of inflammation, suspend the violent pains it had caused, and thus the fatal progress of the disease is arrested. In cancerous ulcerations, observation proves, that the disease does not invade the neighbouring parts until after inflammation has taken place in them; and in these cases leeches applied to the part relieve the sufferings of the patient, and may suspend the destructive progress of the ulceration. Thus, then, leeches applied to the diseased part promote a cure, or furnish in incurable cases one of the most powerful palliations that art possesses. They are not only applicable when the cervix alone is indurated, but are equally advantageous when the whole of the uterus is affected."

When the uterus is low enough down for the cervix to be perceived by separating the labia, leeches may be easily applied. When the uterus is in its natural situation, the speculum must be used, to enable us to apply the leeches to the cervix. When the instrument is applied so that the circumference of its opening exactly and exclusively embraces the cervix, the vagina must be freely washed out with water injections, to cleanse the parts from discharges which would prevent the leeches from biting. The leeches are to be introduced into the speculum, and pushed up by a roll of lint to prevent their returning: the lint being removed when they have fixed. The bites of the leeches produce little pain. M. Duparcque has observed that when the induration appeared to be of a schirrous nature, the punctures made by the leeches bled but little, and that, on the contrary, when the cervix was more inflamed than indurated, the bleeding was more profuse, and sometimes even sufficiently so to

it would render unnecessary the operation for lithotomy. Its diuretic properties have been extolled by many. Mérat says (*Dict. des Sc. Méd.* 39-288) that it may be safely erased from our medical catalogue. *Rev.*

create anxiety. Twelve is the greatest number of leeches ever applied in this manner by the author, and six or eight are generally sufficient.

"The unlooked for success," he says, "that I have obtained from the application of leeches to the cervix uteri in cases of simple induration, and in more serious diseases of the organ, justify me in regarding the practice as superior to all those which have been advised in these fearful cases. The cure of some cases, and the relief of others, have been greatly owing to this practice." Other means, however, are not to be neglected; and in most cases one or more general bleedings are necessary before leeches are thus applied.

We have thought it right to put our readers in possession of M. Duparcque's statements regarding a mode of practice which, as far as we know, has not been tried in this country. In cases of inflammation, or induration of the uterus, too, M. D. speaks highly of tartar emetic frictions upon the inside of the legs, arms, and chest; and several cases are related, from which it would appear that much benefit was derived from this plan. The strength of the ointment recommended is  $\mathfrak{zj}$ . of Ant. Tart. to  $\mathfrak{zj}$ . of lard. About  $\mathfrak{zss}$ . of this ointment is used for each friction.

The seventy-seventh case is related principally for the purpose of proving the benefit that may be derived in alleviating the pain of an incurable cancerous disease, from the endermic method of applying acetate of morphia to a blistered surface, after opium had been administered in large doses internally without benefit. We have seen enough of this mode of practice to justify a regret that it is not more frequently tried by English physicians.

Upon the subject of amputation of the cervix uteri, we find some very sensible remarks, which, together with those of Boivin and Dugés,\* will, we trust, curb the confidence, to use no harsher term, of those Continental surgeons who have so frequently performed this operation. M. Duparcque assures us, of that indeed which we are quite prepared to believe from an attentive perusal of many of these recorded operations, that, judging from facts, he is persuaded that amputation of the cervix uteri has been very often performed when it was at least useless, and that among the many anatomical preparations which have been triumphantly exhibited, he and others have seen several in which there was no appearance of disease that could justify so formidable a proceeding.

Of M. Duparcque's work we may, in all sincerity, say that it is very creditable to himself, and cannot fail to be useful to students and practitioners. The size of the volume is certainly rather unnecessarily enlarged by the detail of eighty-seven cases, of which most might fairly have been condensed, and many safely omitted. The more recent work of M<sup>d</sup>me. Boivin and Dugés upon the same subject, which has been so well condensed, translated, and enriched with copious notes, by Dr. Heming, for the convenience of the English reader, is certainly superior as a general practical treatise; but, admitting this, M. Duparcque's work contains too much valuable matter, and too many original views, to be passed over without loss by any who are prosecuting the very important subjects upon which he treats.

\* *Traité pratique sur les Maladies de la Matrice*, &c.

ART. X.—*Medical and Physical Researches; or, Original Memoirs in Medicine, Surgery, Physiology, Geology, Zoology, and Comparative Anatomy. Illustrated with Plates, containing 160 Figures.* By R. HARLAN, M.D. F.L.S. London; Surgeon to the Philadelphia Almshouse Hospital; Professor of Comparative Anatomy, &c.—Royal 8vo. pp. 653. *Philadelphia*, 1835.

THIS is one of the best specimens of the bookcraft, so far as regards the mechanical execution, that we have ever seen from the American press. Dr. Harlan is well and deservedly known for his attention to natural science more especially: his contributions to this department of knowledge, as well as to that of medicine, are spread through various periodical publications, and it seems chiefly for the purpose of embodying them in one volume that the work before us has been composed. The reader, consequently, has not to look for much novelty in its pages.

The chief medical papers are the following:

1. "An Inquiry into the Functions of the Brain of Man, and in the lower order of Animals; delivered as a Lecture before the Academy of Natural Sciences of Philadelphia, in 1824;" in which the author concludes "that nothing is more clearly demonstrated than that the brain, the material organ of the understanding, is as complex in its composition, and made up of as many distinct and separate organs as there are special faculties of the mind;" and that "man is far exalted above the brutes, by a superior degree of perfection in his intellectual faculties, by a greater power of restraint over his instincts, and by readier methods of combination and of communicating his ideas and feelings, rather than by a difference in the nature of his mental constitution." (P. 439.)

2. "Experiments to ascertain the Operation of various Poisons on living Vegetables, performed in 1830 and 1831." These were undertaken with the view of confirming or disproving the experiments and deductions of Mr. Princep and others regarding the poisonous effects exerted on certain plants, or on animals, by different agents. The experiments were performed by Dr. Harlan, in the presence of Dr. Moore and Mr. Featherstonehaugh. The plants to which the poisons were applied were, *Palma Christi*, *Datura stramonium*, *Nicotiana tabacum*, *Balsamina impatiens*, *Brassica*, *Geranium*, and *Carduus benedictus*. The poisons used were, *Oleum tabaci*, *Oxidum arsenici*, *Extractum stramonii*, *Extractum cicutæ*, corrosive sublimate in solution, oil of turpentine, and a strong solution of opium. Each of these poisons was introduced separately into the circulation of individual plants, by incisions made in the stems under the leaves, and by separate applications of them to the roots, by infusion, and by powder also in the case of arsenic. In some instances the poisons were placed around the roots only: this was done with the corrosive sublimate, arsenic, spirit of turpentine, and oil of tobacco. In no instances was any one of the plants poisoned: one of the young *geraniums* faded, after constantly impregnating the earth about its roots for three days; but this was ascribed to the soil being rendered unfit for the support of vegetable life.

3. In a paper entitled "Experiments performed on living Animals, to prove that the Circulation of the Blood through the Lungs is immediately and entirely suppressed during Expiration," Dr. Harlan maintains the

ancient doctrine, that there is a mechanical impediment to the circulation from the right to the left side of the heart, owing to the extremities of the arteries and veins being subjected to compression; an opinion for which he will find but few supporters. He farther affirms that, in every case of asphyxia, there is a negation of oxygen, and consequent paralysis of the lungs. Such paralysis is therefore, he conceives, in every instance, the *immediate* cause of death.

"For no sooner does the paralysis of the lungs take place, than that power by which the life of animals is produced and continued, and which I suppose to be derived from the atmosphere, is put a stop to, and the blood, which animates all the solids, no longer receiving its supply, death, or the total extinction of the vital principle, is the consequence." (P. 455.)

4. "Report of the Committee of the Academy of Medicine of Philadelphia, on the Means by which Absorption is effected." This is the well-known Report of Messrs. Harlan, Lawrence, and Coates, on the question, to be investigated by experiment, "whether the veins absorb, and whether positive evidence can be obtained that the lymphatics perform that function, or that the lacteals absorb any thing but chyle." The results are referred to in most of the works on Physiology.

5. It has been a disputed point whether the human intestinal worms ever perforate the intestines, whilst it is admitted that the *Strongylus armatus*, an intestinal parasite of the horse, occasionally penetrates the canal, and gets into the arteries, so as to produce aneurism. Such a case is given by Dr. Harlan. A colt, one year old, died suddenly. On dissection, the following appearances presented themselves:

"We first examined the brain, which we found healthy, though there was serous effusion within the sheath of the medulla spinalis. On opening the abdomen, we were surprised by the effusion of at least two bucketsful of fluid black blood. This excited my attention, as I had before met with a similar case, where the cause of the mischief had not been investigated. Continuing the dissection, we came to an immense tumour lying over the right kidney; occupying the whole of the right lumbar and iliac regions, and which was filled with grumous coagulated blood. On removing this, we found the sac confusedly connected to the mesentery, the aorta, and surrounding parts. We next dissected away the aorta abdominalis, above and below the sac, and, on opening the artery, we observed the internal coat near that portion which gives off the mesenteric artery much diseased, and considerably enlarged; the superior mesenteric artery was particularly enlarged; the internal coat both of the mesenteric and of the aorta, for several inches, being nearly destroyed, and of a black colour. On examining more accurately the portion of the aorta below the tumour, we discovered the cause of the whole mischief,—viz. *a great number of small worms*, from a quarter to three-quarters of an inch in length, attached to the internal coat of this portion of the artery, giving it truly a *worm-eaten* appearance. The worms, on examination by Mr. Thomas Lay, proved to be an intestinal species, common in the horse: they must therefore have eaten their way from the small intestines of the animal into the mesenteric artery, from whence they continued their course to the aorta, destroying, as they proceeded, the internal coat. As their presence in this unnatural situation produced inflammation, coagulated lymph was thrown out between them and the current of blood, by which they became in a manner *incised* (encysted). The artery became enlarged by their irritation, and formed a species of aneurism, particularly of the mesenteric artery, which eventually burst suddenly, after the animal had eaten a full meal, and produced immediate death, the usual termination of such cases." (P. 554.)

In addition to these, there are several papers of less interest, amongst which "Observations on the Malignant Cholera, as it occurred in

Philadelphia, in 1832;" and an experiment showing that sperm injected into the cellular membrane at the upper part of the thigh of a bitch, in heat, did not fecundate, are perhaps amongst the most important.

Prefixed to the work is an introduction, containing some judicious observations "on the Affiliation of the Natural Sciences," and more especially on their relation to medicine. It is to be regretted, however, that here, as elsewhere, the author should not have bestowed the necessary pains to prevent typographical and other inaccuracies, which are a blemish to the work, creditable as it is in all other respects. Thus, at page xv., we find "the functions must be observed and compared in all the links in the great chain of beings to *whom* any modification of vitality has been imparted;" and, at page 597, we have, twice repeated the term *rupture uteri*. Several of the names, too, are so modified as to be scarcely recognizable; as, for example, Fife (Fyfe), Shneider (Schneider), Tidyman and Tydiman (Tiedemann), Malacaine (Malacarne), Pausanius (Pausanias), Atheneus (Athenæus), Lyelle and Lyle (Lyell). Most, if not all, of these inaccuracies may be typographical, but they are not the less inaccuracies; and their number shows that due attention has not been bestowed by the author, which is the more surprising as the whole appearance and character of the work show that *effect* has been not a little studied.

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ART. XI.—*Einige Bemerkungen über den einfluss der Witterung auf den Menschlichen organismus überhaupt, und insbesondere auf die anwendung der Seebäder in Dobberan.* Vom Dr. JOHANN H. BECKER.—Parchim, 1835. 8vo. pp. 89.

*Remarks on the Influence of the Weather on Man, and on the Use of Sea-bathing.* By J. H. BECKER, M.D.—Parchim, 1835.

DOBBERAN is a sea-bathing town in Mecklenburg, on the southern shore of the Baltic, nearly opposite the island of Zealand, and Dr. Becker is a physician connected with the bathing establishment of the place. As his pamphlet, like many that emanate from the press of watering places of all countries, is calculated—and probably intended—rather to enhance the local renown of the residence and the doctor, than to add to the stock of medical knowledge, we shall pass over the main subject of it entirely, and only notice one thing which we consider as both interesting and important, and which we find here treated of more fully than in any other work to which we can now refer. This is the *temperature of the sea*, and the relation of this to the temperature of the atmosphere. It certainly is rather odd that we, in this sea-land of ours, with our one encircling coast and our thousand towns built on the very verge of the ocean, should have to go to an obscure town in Mecklenburg and to a German doctor for information on such a subject. But there is no limit to the enthusiasm and laborious industry of the Germans.

Independently of the scientific interest attaching to it, the temperature of the sea on coasts is of much more importance, in a medical point of view, to those who use sea-bathing, than is generally imagined; and we are quite sure that, if more attention were paid to this matter by the medical residents at our sea-bathing places, they would not only be better able to explain the anomalies in the effects of the sea-bath, so

frequently witnessed by them, but would also be capable of laying down much more precise rules for the proper seasons and times of bathing: and, if we possessed proper registers of the summer temperature of the sea on our different coasts, we should be much better able than at present to fix on the best resort for particular invalids. The attention of the profession is now much alive to the difference of *atmospheric* temperature in different localities of our island, and this is universally considered in making choice of a residence for invalids in the winter season. In sending patients for sea-bathing, however, the temperature of the sea water is never considered; and yet the fact is, that this varies very considerably in different places; much less, indeed, than that of the air, yet sufficiently to make the difference a cause, in certain delicate subjects, for preferring one bathing place to another. The most influential source of the difference of temperature on our coasts is their relative steepness or boldness, flatness or shallowness. On a bold rocky coast, where the ebbing of the sea is shown rather by a perpendicular than a horizontal recession of the water, there will be much less difference of temperature in the water at different days, and at different hours in the same day, than on a low flat shore, from which the tide recedes to a great distance. In the latter case, the warm summer sun will exert a much greater heating power over the comparatively thin stratum of water spread over the flat ground, than on the deep waters of the bold coast; and, more particularly, if the ebb takes place in the forenoon, leaving the low, sandy, or shingly beach exposed to the sun's rays during the hottest part of the day, the flowing tide of the afternoon will not only receive its complement of heat from the direct rays of the sun, but will take up that which had been imparted to the expanded shore exposed during the ebb. The consequence of this is, that the temperature of the sea-water on a shallow coast is often not only as high, but actually higher, than that of the air; and, when it is further considered that cold weather produces analogous but opposite results, the shallow water being as readily cooled as it is warmed, we shall be convinced that this is really a matter of importance. We know, by experience, that the sea-water at one of our bathing places varies in the course of the same season, at different days and hours, upwards of twenty degrees; and in Dr. Becker's tables we observe a difference of twenty-three degrees; and, although a much less difference of temperature than this is justly regarded as of great importance, and is always attended to in prescribing an ordinary bath for our patients, we never think of it in prescribing a bath in the open sea.

As in the Baltic sea there is very little ebb or flow, the sources of variation of temperature in the water of the coasts are fewer; but, as the shores of that sea are generally low and flat, (at least the southern, the water is much influenced by the sun's rays and the atmospheric temperature. The tables of Dr. Becker, therefore, will not be considered as offering any close approximation to the results likely to be obtained on the coasts of this island. Still they are interesting and important, and afford many valuable analogies which directly apply to our own seas.

In one table, Dr. Becker gives us the maximum and minimum monthly temperature of the sea at Dobberan, at seven a. m. and four p. m. for the months of June, July, August, and September, for a period of nineteen



years, viz. from 1818 to 1832 inclusive, (with the exception of the year 1829); in two others, he gives us the daily temperature of the sea and the air, at the same hours, during the same months of the years 1833 and 1834. From these we have extracted the following general results, which will convey a more precise idea of the phenomena than the full details of the original tables. We will only premise, that the temperature was always taken at the same spot, where the depth of the water is from seven to eight feet, the thermometer (Fahrenheit's) being sunk to the bottom, and kept from five to eight minutes in that position.

TABLE I. *Temperature of the Sea at Dobberan, (Results of nineteen Years, 1813-1832.)*

MONTH.	June.		July.		August.		Septemb.	
Hour of Observation.	At 7 A.M.	At 4 P.M.	At 7 A.M.	At 4 P.M.	At 7 A.M.	At 4 P.M.	At 7 A.M.	At 4 P.M.
Absolute maximum .....	66	75	63	76	69	75	68	72
Absolute minimum .....	50	52	54	56	57	58	53	54
Mean of the maxima .....	62.6	66.8	66.4	71.3	65.5	69.8	61.7	61.8
Mean of the minima.....	54.5	56.5	57.9	60.5	60.1	61.3	55.2	56.8
Mean of the maxima and minima	58.5	61.5	62.1	65.9	62.8	65.5	58.4	59.3
Mean daily temp. of each month, calculated from both observations.	} 60		64		64.1		58.8	

TABLE II. *Relative Temperature of the Sea and Air during 1833 and 1834.*

		June.				July.				August.				September.			
		7 A.M.		4 P.M.		7 A.M.		4 P.M.		7 A.M.		4 P.M.		7 A.M.		4 P.M.	
		Sea.	Air.	Sea.	Air.	Sea.	Air.	Sea.	Air.	Sea.	Air.	Sea.	Air.	Sea.	Air.	Sea.	Air.
Rel. Min. Max.	1833	60	63	64	80	63	64	67	69	62	59	66	65	58	58	60	62
	1834	64	66	68	79	70	72	74	90	70	70	75	79	69	67	70	78
	1833	52	54	56	57	59	55	60	55	55	50	58	55	54	49	55	50
	1834	54	50	56	54	60	58	63	64	63	52	66	68	52	50	58	57
	1833	57.4	58.5	59.7	62.4	60.2	59.2	63.3	63.4	57.9	54.6	60.2	59.6	56.1	54	58.1	57.8
Rel. Min. Max.	1834	59.4	58	63.2	64.3	65.3	64.9	68.9	71.6	68.4	64.3	70.1	71.1	65.4	67.3	63.8	65.8

These tables clearly demonstrate the complete dependence of the sea on the air for its temperature, at least at Dobberan. Although we find considerable discrepancies, as might be expected, in the relation of the maxima and minima of the air and water to each other, in the different times of the day and in the different months, still it will be seen that the relation of the general or mean temperature of these coincide very closely. Thus, we find, from the first table, that the water is in all the months warmer in the afternoon than in the morning, and warmer in the months of July and August, than in the preceding or subsequent months; and we know that this is the case with the temperature of the air. But the connexion between the temperature of the two media is still more strikingly shewn in the second table, where we see the mean temperature of both

rising and sinking together, at the different hours of observations, through the different months, and in the whole season. To notice only one proof of this fact: the two summers, 1833 and 1834, differed greatly in their temperature, the latter being much the warmest of the two, and the evidence of this is quite as conspicuous in the temperature of the water as in that of the air.

This will appear very striking from the following results deduced from that table.

	1833.		1834.	
	Air.	Sea.	Air.	Sea.
Mean of the maxima .....	85	82.4	74.7	70
General mean temperature .....	58.6	59.1	64.6	65.5

Here we observe that, whilst there is a very great difference between the actual temperature of the two years, there is a very slight difference between the relative temperature of the sea and air in both.

ART. XII.—*The Obstetrician's Vade Mecum; or, Aphorisms on Natural and Difficult Parturition; the application and use of Instruments in Preternatural Labours; or Labours complicated with Hemorrhage, Convulsions, &c.* By THOMAS DENMAN, M.D. &c. *Considerably augmented, and arranged according to the present State of Obstetricy,* by MICHAEL RYAN, M.D. &c. *Ninth Edition. Illustrated with seventeen Plates, and a Portrait of the Author.*—London, 1836. 12mo. pp. 235.

THAT some important improvements have been made both in the science and practice of midwifery since the time that Denman wrote, is very certain; but it will, we believe, be admitted by all who are conversant with his works, that, even estimating them by the knowledge we now possess, very few practical errors will be detected in them. Various additions are required, and some few corrections, to bring the works of this respected author up to the level of our day; and Dr. Ryan undertakes this task for the well-known "Aphorisms," one of Denman's shortest but not least celebrated publications, as is proved by the fact of its having gone through no less than eight editions. For the purpose of rendering his edition more useful to the student, Dr. Ryan has prefixed the anatomy of the pelvis, and the mechanism of natural parturition. He has also given a minute description of the duties of the obstetrician, and of the assistance to be afforded during natural and difficult parturition. The use of the ergot of rye is also touched upon. Notes are added to the original text where they were required, and a description is introduced of the mode of performing the chief obstetric operations. Dr. Ryan admits that this little work is not intended to supersede systematic treatises on the same subject. Practical conclusions are stated, but the reasonings and facts upon which they are founded are not entered upon.

We shall confine our notice of this edition to the most important alterations and additions that have been made by Dr. Ryan.

The passage of the head through the pelvis, the first position, is accurately described as far as the description goes; but, considering the

importance of the subject, we would have had it somewhat more in detail. The second position is dismissed with still more brevity: it is merely stated "that the relative position of the infant and pelvis are the same as the first, but at the other side of the pelvis." Now, as there is much difference of opinion as to the comparative difficulty of the labour, in consequence of the vertex presenting to the right instead of the left acetabulum, we think that Dr. Ryan should have stated his own views upon the subject. Our own experience teaches us nearly to agree with Velpeau\* and Osiander,† and almost entirely to differ from Burns.‡ We believe that the interference recommended by the latter, merely on account of the second position of the head, is rarely if ever justifiable. As regards the account given of the manner in which the head passes through the pelvis in the third position,—the occiput to the right sacro-iliac symphysis, the forehead to the left acetabulum,—we must observe that Professor Naegele's§ opinions agree more nearly with our experience than Dr. Ryan's. We do not assert that, in this original position, the occiput never turns into the hollow of the sacrum; but we believe, with Naegele, that much more frequently, at least, the occiput, when it enters the lower part of the pelvic cavity, turns gradually forward, so that the long diameter of the head becomes in relation to the left oblique diameter of the pelvic cavity. And, if the occiput does turn into the hollow of the sacrum, and "the face glide on the anterior and left lateral and inclined plane," the face does *not* "come *under* the neck of the pubes." The forehead rests against the interior of the symphysis pubis, and rises gradually as the occiput is made to descend over the perineum by the uterine power; and it is only when the occiput passes out that the face escapes under the arch. And this indeed Dr. Ryan correctly tells us; but the error consists in his stating that the face "comes *under* the arch of the pubis, *when* the occiput places itself in the curvature of the sacrum.

The "*duties of the obstetrician*" in the lying-in room are, upon the whole, properly stated; but we can hardly believe Dr. Ryan is serious when he says that the practitioner "desires the nurse to pin a napkin round each arm" before he examines per vaginam. All unnecessary parade in the lying-in chamber should be avoided, and this preparation of covering the arms with napkins is no less unnecessary than unusual. In a book, too, intended for the use of students or very young practitioners, we object to the recommendation, "when the pains are slight and teasing, without making any expulsive effort," of giving "a full dose of morphia or opium." We would willingly trust to Dr. Ryan's judgment upon this point, but we fear that a less experienced accoucheur, in acting upon this direction, might fall into the not uncommon error of putting an entire stop to uterine action, by giving too large a dose of opium. "The ergot of rye," Dr. R. says, will "always" effect the removal of a retained placenta. This is surely attributing more certain powers to the ergot than it really possesses. It may effect the object, but it is more likely to fail; and we doubt, at least, whether, in

\* *Traité des Accouchemens*; seconde Ed. t. i. p. 499.

† *Handbuch der Entbindungskunst*. 1833. Band 3. S. 269.

‡ *Midwifery*; eighth Edition, p. 393.

§ *Mechanismus der Geburt*. Heidelberg, 1822.

cases of retained placenta, it would be wise to trust to the ergot at all. Dr. R., too, thinks that the ergot of rye "will supersede the forceps in many instances." We, on the contrary, believe, with Dr. D. Davis, that it is extremely doubtful whether this medicine will *ever* supersede the assistance of the forceps.\*

In a note to Denman's Aphorisms on Hemorrhage from attachment of the placenta over the os uteri, Dr. Ryan states that "the contractions of the uterus may be excited by a proper use of ergot, which may be given before or after the hand is introduced into the womb, according to the strength and state of the patient. When there is great debility, the ergot must be given in large or double doses, seldom exceeding half an ounce." Now, granting that the ergot does possess the property assigned to it of producing sudden and violent contractions of the uterus, it could be neither prudent nor safe to give it *before* turning was effected in these cases of hemorrhage; for thus the operation would be rendered more difficult for the practitioner, and more dangerous for the patient. With respect to the "half-ounce" doses which we are "seldom to exceed," we have merely to say, that we never heard the medicine was exhibited in such quantities.

Dr. R. informs us, "it is always to be remembered that the use of the forceps is to diminish the bulk of the head." Now, admitting that where there exists a *moderate* disparity of size between the head of the child and the pelvis of the mother, that the head may be safely and sufficiently diminished in bulk to permit its extraction, "it is always to be remembered," (to use the editor's words, but for another purpose,) that the forceps are at least as frequently applied, on account of inefficient uterine action, &c., where there is no want of proper relation between the size of the body to be passed and the diameters of the cavity through which it is to pass, and where, consequently, no greater pressure upon the head can be necessary or justifiable than secures its being firmly grasped within the blades of the instrument.

To several of Denman's Aphorisms on the use of the Forceps, Dr. Ryan has added judicious notes. He appears to prefer the curved forceps in all cases. The majority of teachers in London recommend the straight forceps, especially for beginners; and we believe this is generally the best form of the instrument.

We do not understand the following statement: "Cephalic version is required when the occiput is turned to the left side, or the reverse. The object is to raise the head into the iliac fossa; press on the abdomen with the other hand, incline the uterus to the side, *and bring down the feet*." This is certainly *not* "cephalic version;" by which term, the precision of which we are not prepared to defend, is implied a manual operation by which the presenting part is pressed back again, so that the head may descend; or the head itself is to be grasped, and placed in a favorable position. We may observe, that this cephalic version is very rarely practicable. Osiander claims the merit of reviving it from Celsus, and thinks more favorably of the practice than most other modern writers.

We are glad to find Dr. Ryan opposed to a practice which has been

\* Madame La Chapelle (*Accouchemens*, t. i. p. 52,) says of the ergot, "*son innocuité est sa plus grande vertu*."—REV.

recently most improperly defended by certain writers in this country. To Denman's Aphorism, "there never can be occasion to separate the arm which presents from the body of the child, and, when this has been done, instead of facilitating, it has impeded the operation" of turning, he adds the following note:

"The arm ought never to be removed, unless when congested so as to fill the os externum and prevent the introduction of the hand; and this rarely happens unless after the infant has been dead for hours or days. The amputation of the arm during the life of the infant is never performed, except by those who are grossly ignorant of medical knowledge; and it is never so swollen during life as to require removal."

To the observation of Dr. Ryan, that the accident referred to rarely happens, we should be inclined to add, that it never takes place.

We cannot perceive anything at all "objectionable" in Denman's cases or doctrine respecting the so-called "spontaneous evolution." Dr. Ryan, in common with most of those who refer to Denman's opinions upon this subject, mistakes their precise meaning.

Upon the subject of "Labours rendered tedious by obliquities of the uterus," Dr. Ryan states, very properly, that the position of the patient should be appropriate to the particular kind of obliquity; but we decidedly object "to breaking down the os uteri with the finger" in these cases. Nature will gradually effect the desired alteration in the situation of the uterus. We state this as a general rule, and admit there may be exceptions to it.

The plates at the end of the volume are very neatly executed, and the subjects illustrated are well chosen for the instruction of the student. In many parts of the work we detect errors, which have apparently crept in from haste or inattention; but we willingly admit that some of the additions to, and emendations of, the Aphorisms of Denman will be useful to the learner.

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ART. XII.—*Diagnostisch-praktische Abhandlungen aus dem Gebiete der Medicin und Chirurgie durch Krankheitsfälle erläutert.* Vom Dr. LÖWENHARDT. *Erster Theil.*—Prenzlau, 1835. 8vo. pp. 352.

*Diagnostic and Practical Essays on Medical and Surgical Subjects, illustrated by Cases.* By Dr. LÖWENHARDT. *Part First.*—Prenzlau, 1835.

THIS work consists of three essays,—1. On the Pathognomonic Signs of Diseases, especially Pneumonia; 2. On the Typhoid Symptoms connected with Scarlatina; 3. On Acute and Chronic Inflammation of the Ovary, or Oophoritis. Of the first two we merely mention the titles, as not containing anything peculiarly new or interesting: of the third essay we must speak more fully.

Oophoritis, or inflammation of the ovary, is a disease little known to practitioners as a distinct affection; not so much on account of its rarity as from the obscurity of its symptoms. Dr. Löwenhardt's observations on this affection are practically valuable and deserve attention. Dr. L. considers that examination per rectum is almost the only certain mode of detecting this disease; that, on account of the situation of the ovaries, it is impossible to gain the necessary information by examination per vaginam: whereas, per rectum, the finger can reach the affected

part, and detect the existence of tenderness on pressure; and, if the ovaria be at all enlarged, which is usually the case, the gland itself can be distinctly felt.

There seem to be two periods in a woman's life at which the ovaries are more liable to become inflamed than at any other: the one is shortly before, during, and immediately after the appearance of the menses; the other, shortly after labour or premature expulsion, where the increased activity of the circulation, which had been directed towards the uterus, is now spent on other and adjacent organs.

The symptoms are not always precisely the same, being considerably modified according to the different organs which are affected at the same time; and these will very much depend upon which side of the ovary is affected. It is an established practical fact, that acute inflammation of deep-seated parts, or of the ovary itself, especially after labour, seldom exists without spreading to the neighbouring organs: it may remain distinct for a short time, but, as the disease advances, the peritoneum soon becomes affected: hence it is of great importance to form our diagnosis as early as possible.

"As long as the inflammation is confined to the ovarium itself, the seat of the disease can only be shown by the pain, since there is no functional disturbance to mark its presence. Immediately over the symphysis pubis on the affected side, (both ovaries are seldom inflamed at once,) between the groin and the uterus, the abdomen is painful and somewhat tense; at times it is distinctly swollen, and hotter than natural. The pain is seldom violent, rather dull, but becomes sharper and darting as soon as the peritoneum is involved; the part is painful on pressure, and on suddenly assuming the erect posture; and, as long as the inflammation does not spread, remains confined to the affected spot. Usually, however, the inflammatory process rapidly extends at an early period to the peritoneum, especially when under circumstances which predispose this membrane to inflammation, viz. the puerperal state, and, besides the sharp darting pain above mentioned, produces affections either of the bladder or the rectum. In the former case, patients complain of frequent desire to pass water, and scalding even to a painful degree when evacuating the bladder, so as to be easily mistaken for inflammation of its mucous lining; the neighbourhood of the bladder is felt tense, and is very tender on pressure. The urine also is mostly high-coloured, and is passed in the usual quantity in spite of frequent interruptions. The function of the rectum is but little impeded. On the other hand, when the irritation has spread to the posterior portion of the peritoneum, the characters of the disease are very different; the bladder now is less affected than the rectum. In this case, the patient has a sensation of painful pressure in the cavity of the pelvis, amounting to bearing down; the hypogastric region is not so tense or hot, and less sensitive to external pressure. Fruitless forcing to evacuate the bowels arises, frequently amounting to actual tenesmus." (P. 306.)

Without the aid of examination per rectum, it would be exceedingly difficult to form a certain diagnosis: the finger, per anum, easily reaches to the side of the uterus, where the swollen and generally painful ovary may be distinctly felt. Examination per vaginam leads to little or no certain results. We have, it is true, a number of indistinctly marked symptoms, which show that inflammatory action is going on. The vagina is warmer than natural; the os and cervix uteri are neither painful nor swollen at the beginning of the disease: in some cases there is a slight degree of tumefaction of this part, such as is observed shortly after conception. The constitutional symptoms differ but little from those which accompany other inflammatory affections of the pelvic organs, and, as long as the ovary alone is affected, are not of any great extent.

The celebrated Carus of Dresden was the first who made the assertion that the proximate cause of nymphomania depended on an inflamed state of the ovaries, on the ground that these organs are the chief seat of venereal pleasure in the female. This view has been adopted by various continental authors, without attempting in the slightest degree to ascertain its correctness. We have elsewhere and long since expressed our doubt as to the accuracy of Professor Carus's opinions on this point, and we find this doubt confirmed by the author. We do not deny the possibility of ovarian disease resulting from a state of constant and salacious excitement, (the same is known to occur with the male testis;) but, that an inflammatory state of the ovaries is the necessary condition to nymphomania, we much question. We have never yet seen a case arising from this cause; whereas, we have frequently witnessed cases of considerable venereal excitement arising from an inflamed condition of the vagina and external parts. On the other hand, inflammation of the ovary decidedly occurs, not only without the slightest approach to nymphomania, but is frequently attended by a directly opposite state of feeling on the part of the patient. In a patient at this moment under our care, where the left ovary can be distinctly felt per rectum, enlarged, hard, and painful, this is especially the case; sexual intercourse being not only a subject of dread, but even aversion. Dr. Lowenhardt has devoted several pages to disproving these views.

In order to give our readers a better view of the character and phenomena of this disease, we will briefly quote his 4th Observation, which is rendered more interesting from the patient's having had a relapse of her complaint.

"Mrs. S—, æt. 40, of middling stature, delicate figure, and florid complexion, mother of several children, (the youngest of which is eight years of age,) having hitherto enjoyed good health, was attacked on March 12th, 1829, with pains in the abdomen, when the catamenial period was just over, in consequence, as she supposed, of catching cold: these pains increased considerably the following day, and compelled her to keep in bed. She complained of a continued throbbing pain on the right side of the abdomen, in the ovarian region, and a violent desire to pass water, accompanied with much painful scalding: the urine red and clear. On closer examination, the abdomen appeared nowhere enlarged or tender, except in the above-mentioned spot, which was somewhat swollen; and pressure here increased the pain considerably. The vagina was hot, but not painful, neither was the rectum; but, upon examination with the finger through this passage, the ovary of the right side of the uterus was found swollen and painful. There was general constitutional suffering; the patient was feverish, with thirst, flushed cheeks, suffused eyes, a white dry tongue, pain of head, pulse quick, but neither full nor hard. She was put on a strict antiphlogistic treatment, and recovered in the course of eight days.

"On the 17th of April of the following year, an alarm of fire in the night was the cause of her catching another severe cold. She passed a sleepless night, had frequent rigors, with pain in the same side of the abdomen as in the former year, and suppression of the catamenia, which happened to be then present. The next morning she complained of dull pain on the right side of the abdomen, in the same spot as formerly, much increased on pressure; but it appeared to be deeper seated this time, and the abdomen was not so swollen. She experienced a constant forcing to evacuate the bowels without effect, but this time she had no difficulty in passing water. The catamenia had ceased entirely, and the vagina felt hot and dry. Introduction of the finger into the rectum produced pain. The ovary was evidently in a state of inflammation, but this time it was more swollen and painful. The constitutional symptoms were more marked during this attack: the skin was hot and dry, and she had much

thirst. She complained that her head was confused; the pulse was 126, not particularly hard; the urine sparing and red. She was bled to ten ounces; twelve leeches were applied to the abdomen, which was afterwards fomented with a narcotic application; and she took a grain of calomel every two hours.

"19th. Her general condition appeared somewhat improved, but the pain of the abdomen was not abated, and the impulse to strain (during which only a small quantity of mucus passed,) was rather increased. The bowels had not been moved, although she had taken ten grains of calomel, and enemata had been instantly returned without effect. Twenty more leeches were applied to the painful spot, and, besides the calomel powders, she was directed to take an oleaginous emulsion.

"20th. The bowels acted twice during the night, and the irritable state of the rectum was somewhat diminished, but the pain in abdomen was not much abated; the pulse continued quick, although neither full nor hard; the heat of surface was moderate; urine red and thick. Ten more leeches were applied. She was directed to rub in a drachm of mercurial ointment every two hours, and take a warm bath.

"22d. The night was passed more quietly than hitherto; the symptoms were diminished. The same remedies were again given at longer intervals, and the warm bath again ordered.

"23d. After a restless night, the local and general symptoms were found again aggravated. Twelve ounces of blood were taken, in spite of her apparent debility. On tying up her arm, she fainted. In order to modify the action of the bowels, which had been much increased by the calomel, I added a little ext. opii to the emulsion, and stopped the mercurial frictions.

"This last bleeding produced a complete change. The next morning, every feeling of pain had nearly ceased; the action of the mercury began to show itself upon the gums and salivary glands. Her recovery was somewhat retarded, from the nurse's having continued the mercurial frictions the following night, contrary to order." (P. 338.)

The essay concludes with a short chapter on Chronic Oophoritis, "for which the texture of the ovaries seems to afford ample occasion:" it is indicated by almost precisely the same symptoms as the acute, only in a less severe degree, and with a less rapid course.

We consider Dr. Lowenhardt's little work as very creditable to the industry and calm practical spirit of the author, and shall be glad to see the continuation of it.

ART. XIII. *Erfahrungen ueber die Anwendung der Kälte in Krankheiten.* Von J. D. BRANDIS, M. D. Königl. Dänischen Leibbarzte, &c. &c. &c. S. 116. Berlin, 1833.

*Practical Observations on the Use of Cold in the Treatment of Disease.*

By J. D. BRANDIS, M. D. Physician in Ordinary to the King of Denmark, &c. &c. Pp. 116. Berlin, 1833.

THE title of this work gives a very false idea of the nature of its contents: it has but little of a practical character about it; and even that little is so obscured and contaminated, (if it be allowed to use the expression,) by peculiar dogmatic views in physiology and pathology, that the strongest impression made on the mind of the reader must be regret that the fifty years' attention which the author assures us he has devoted to this particular subject, should not have been guided by philosophical principles, of less pretension perhaps, but at the same time resting on clearer evidence and of more extended applicability.

A brief notice of it in the pages of this Journal may, notwithstanding, offer some interest, were it only as illustrating by a specimen the mode of reasoning and the nature of the doctrines which prevail among



a certain class of German transcendentalists, on the obscure and difficult matters occupying a position intermediate between metaphysics and the natural sciences.

As is very commonly the case with those who assume the greatest latitude in their hypothetical speculations, and in the extent of the inferences deduced from them, Dr. Brandis discourses most rationally at the outset on the futility, for all truly philosophical purposes, of the attempt to separate theory and experience,—and on the importance of the accessory sciences of Anatomy, Physics, Chemistry, &c. He soon, however, quits this moderate tone, and, commencing by an eulogium on Hippocrates, not merely as a model of unrivalled excellence in observation and natural sagacity, but as a guide still meriting implicit confidence in the modes of philosophical investigation, proceeds thus :

"He, (Hippocrates,) it is true, was acquainted neither with galvanism nor magnetism, with oxygen nor nitrogen; but, not the less, had a clear perception of the *pneuma* which produces the unity and mutual dependence of the universe and the individual organism,—and of its influence on climate, health, and disease. He ventured to assert that anatomy was a study rather for painters than physicians; and yet was tolerably familiar with the functions of organs and their mutual re-actions on each other. His *Calidum* and *Frigidum*, *Humidum* and *Siccum*, had no foundation in an accurate knowledge of vital action,—and yet it is his observation, (true to nature,) of increase and diminution of animal and vegetative life, that, subsequently, and in forms against which he protested, has been reproduced by others, and made the basis of theories of every kind." *Introd.* p. v.

Following the example he has thus proposed to himself, the author next announces, as the leading theory of his treatise, the following proposition :

"That life itself produces heat and cold in the organism, in the same manner that the cosmic life (*pneuma*,) causes both in the universe, i. e. directly, and not as a consequence of the combinations or decompositions of matter." P. vii.

This is but a small portion of the powers attributed to this vital principle; for, by implication at least, we find bestowed upon it, intelligence; discrimination; volition; the regulation of all organic processes with the purpose of preserving the integrity of the œconomy;—a capability of counteracting the deteriorating influence of external agents; and, at the same time, a susceptibility of certain changes in the nature and direction of its activity from the operation of various causes.

To attempt to follow out in their full extent the conclusions which Dr. Brandis goes on to deduce from these and similar principles, would be a very unprofitable task, and, in truth, would be attended with no small difficulty, owing to the impossibility of conveying in a moderate compass any correct notion of his opinions, even when they admit of comprehension. It will be enough to give a sketch of the manner in which he applies them to the subject under consideration. Assuming that the causes of disease operate directly upon the vital principle, or, as he terms it, the organic will, he asserts that diseases admit of cure by giving another direction to this will, through the medium of influences to which he attaches the common appellation of counter-irritants. Of these the most speedy and effective, whether as regards the entire organism, or individual parts of it, consists in change of temperature. Cold, in particular, excites the organic will to the production of heat, and thereby moderates or removes morbid vital manifestations. Again,

the absolute effects of cold are of two kinds;—direct upon the particular parts to which it is applied; and indirect, by means of sympathies, on remote organs. In general terms, it first diminishes vital action, re-action succeeding, unless the application be so long continued as to exhaust and overcome the organic powers, and produce muscular inaction, stupor, sleep, &c. The extent of the effect produced admits of considerable variation, according to the rapidity of the transition from one vital condition to another, both as regards the direct and indirect consequences of the agent.

As relates to the vital manifestations which occur in certain organs vicariously with the applications of cold to others, they are more decided in proportion as the ordinary condition of the individual constitution is more excitable and indeterminate, as is the case in hot climates, in children, and during periods of change, *e.g.* dentition, approach of puberty, pregnancy, &c. Here also, as in the former case, much depends on the rapidity and the amount of the change of temperature, with reference to time as well as to degrees of heat. Pp. 21, 30.

Such is a brief abstract of the therapeutical doctrines of Dr. Brandis, as regards the effect of cold, stripped of the peculiar language and manner of expression by which his treatise is distinguished. It will be seen that, so far as they extend, they are more rational than might have been anticipated from some of his philosophical and pathological notions. They are confined, however, and scarcely reach beyond the bounds of the most ordinary common-place. At least, two points are passed over, which, in an attempt to estimate the powers and the mode of action of cold, as a therapeutic mean, would certainly deserve especial attention, *viz.* the internal use of cold, and the effects produced immediately upon the nervous system, in consequence of the sensations connected with its employment.

In typhoid fevers, Dr. Brandis has employed, since 1784, cold affusion and bathing with cold water, either alone or mixed with vinegar; and with greater success in proportion to the intensity of the heat of the skin, especially if accompanied with a small, hard pulse; whilst, on the contrary, he has found them less serviceable, or even injurious, in bilious and other fevers, in which the activity of the disease is concentrated on the intestinal canal. His experience on this practice was published as long back as 1794, in Hecker's Magazine, vol. v., and, as he states, previous to obtaining any intimation of the observations of Wright and Currie.

The notice of the application of cold in thoracic diseases is brief, and bears little trace of experience. It is needless to say that, in this country, the practice of using cold externally has been confidently recommended in certain pulmonary affections, chiefly of a chronic nature. Generally, the intention, as far as may be judged from the empirical nature of the practice, appears to be either to produce a certain degree of counter-irritation,—stimulants, as vinegar, &c. being applied in conjunction with cold water; or, by lessening the susceptibility of the external surface, to produce a tonic effect, and to lessen the liability to internal congestion from casual variations of external temperature. A third method, differing from either, consists in the continued application of cold in various shapes, with the view of producing sedative effects on the thoracic circulation, by the direct abstraction of heat: a

mode of practice that finds a parallel in the employment of cold applications in peritoneal inflammations, as advocated by Dr. Sutton. This plan, though doubtless occasionally applicable, obviously requires caution, inasmuch as it is not without some risk of increasing internal disease, by repelling blood from the surface. The form of disease to which it appears best adapted, is acute pulmonary hemorrhage, accompanied by a hot skin, with a sense of internal heat, and an excited, but not forcible condition of circulation.

There appears to be something of novelty, at least, in the recommendation of cold bathing and affusions in rheumatism, a practice, of which Dr. Brandis speaks confidently, in very favorable terms, particularly with the intention of diminishing the susceptibility in certain individuals to changes of external temperature.

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ART. XIV.—*Della artificiale Riduzione a Solidità Lapidea e Inalterabilità degli Animali, scoperta da GIROLAMO SEGATO. Relazione dell'Avvocato GIUSEPPE PELLEGRINI.—Padova, 1835. Pp. 44.*

*Of the artificial Conversion of Animals to a State of stony Induration and Indestructiveness, discovered by GIROLAMO SEGATO. By GIUSEPPE PELLEGRINI.*

THIS is one of the most extraordinary books we have met with for a long time, in regard to style and composition; but the subject of it is more wonderful still. In the matter of grandiloquence and fustian, we think "the force of nature could no further go" than in the boasting and sonorous periods of Signor Pellegrini; and assuredly, if what he tells us of the doings of the subject of his eulogies, Segato, be in anywise true, art seems also to have reached the limit of her marvels. To reduce any part or the whole of any animal body to a degree of solidity, equal not only to that of marble but that of flint, so as to admit of the most perfect polish, and at the same time to preserve its exact form and colour; to be consequently insusceptible of every destructive process to which animal matter is subject: such is the feat which the historian of this new Gorgonean art not only assures us that Segato can do, but adduces numerous certificates from learned doctors, and anatomists, and chemists, to prove what he has done. Nay, not only can he petrify to this degree, but he can modify his process in such ways as to retain the *flexibility* of the limbs, while the imperishable stoniness remains! Truly, this is something not dreamed of in our philosophy; and, when we couple the astounding facts narrated with the inconceivably bombastic eulogies showered upon the inventor, we can hardly persuade ourselves that the whole is not a piece of humorous invention, and that Girolamo and his petrifications have not been dug out together from the ruins of some new *Laputa* by some Italian *Swift*. If our reason is startled at the idea of bodies hard as flint and flexible as wax, can we persuade even our imagination that such an address as the following, prefixed as a sort of dedication to this pamphlet, could in truth be written in sober earnest, by a learned and grave professor, to a *bona fide* living man of (unpetrified) flesh and blood?

"To Girolamo Segato—To the new genius of the creative wisdom of Italy, who the mortal remains of man—from top to toe, from flesh to bone, from brain to blood,

—in all the splendour of native colouring petrifies, elasticises, eternises;—To the victor of the imitative arts, amid all his marvels the modestest of men, the prime applauses of the whole earth, *Luigi Muzzi* astonished sends.”

And, nevertheless, there seems to us internal evidence in the book that it is no quizz; and, after making ample allowance for the exaggerations of national vanity, the zeal of friendship, and the flights of oratory, we are forced to admit either that a very singular and important discovery has been made, or that the countrymen of Boccaccio are still very accomplished story-tellers.

Signor Segato, we are told, is a great geographer and traveller, and it was in the midst of an excavation left by one of those whirling pillars, or sand-spouts, in the deserts of Ethiopia, that he was led first to conceive the possibility of factitious petrification, by the discovery in this place of some human remains exsiccated, *carbonized*, and preserved by the influence of the burning sand. Here “he discovered an entire human body, with flesh and bones entirely carbonized, the one black as charcoal, the other as soot, and both friable. It appeared manifest that the carbonization must be derived from the intense heat of the sand, (*incandenza del bollente sabbione*,) amid which the body had been buried probably for ages. Now, thought our traveller, if the natural heat of the sand has been able to effect such complete exsiccation and carbonization of animal substances, why may not a more moderate degree of artificial heat produce a less degree of exsiccation and induration, but still sufficient to preserve them from decay? But how and by what means can such a result be obtained? Such was the problem which, from that very instant, Segato set himself to resolve, and which at last he succeeded in solving. His meditations and lucubrations were prolonged for months; but at length a bright thought, like a torch amid darkness, illumined his mind, and gave the clue to his grand discovery.” (P. 6.) This is all we are told of the process, which is kept a secret, and certainly we are not likely to derive much insight on the subject from this detail; for few things can be less alike than the black, friable, carbonized bodies of the desert, and the bright and brilliant *human agates* announced as the result of Segato’s secret.

The author of this pamphlet, justly calculating on the incredulity of his readers, “having himself doubted of so great a prodigy until convinced by the testimony of his own senses,” subjoins certificates from four of the professors at Florence, (*Betti*, professor of physiology, *Zanetti*, professor of anatomy, *Tozzetti* and *Gazzeri*, professors of chemistry,) in all of which are asserted, from personal inspection, the statements given above. An extract from one of these will suffice.

“Florence, 14 April, 1835.—I, the under-written doctor of medicine, &c., have observed and attentively examined the divers anatomical and anatomico-pathological preparations made by Sig. Girolamo Segato, as likewise those of comparative anatomy, and of various fishes, reptiles, insects, and other animals destined for the collections of natural history; and can assert that, over and above the great anatomical knowledge and practical skill therein by him displayed, the said Segato has found a method hitherto unknown, and exclusively his own invention, whereby the bodies of animals, in whole or in part, are preserved not only in their natural colours, but with the characters which they have acquired in various diseases; and that such parts, moreover, have assumed a degree of hardness which may be termed, in truth, stony,

inasmuch as they can be with difficulty scratched, resist the action of the air and moisture as well as the power of the moth, and are consequently absolutely incorruptible and unalterable, &c." (Signed) "ANTONIO TARGIONI TOZZETTI." (P. 9.)

A similar attestation is subjoined from the Medico-Chirurgical Society of Bologna.

Among the preparations of this kind described in the pamphlet as being in the collection of Segato, are many small quadrupeds, birds, fishes, reptiles, insects, &c., and also many specimens in normal and morbid human anatomy, as hands and feet, the liver, brain, mammæ, &c., all retaining their natural configuration and colour, and only varying in consistence. But what the historian of Segato's discovery (who, it will be recollected, is not a medical man,) seems to regard as his crowning glory is a small table, in which is inlaid a parallelogram composed of 214 pieces of apparently polished stone, of the most splendid colours and as hard as flint, but which ("chi il crederebbe?") are all portions of human membranes, for the most part altered by disease, and assuming various colours according to the nature of the morbid affection. For jaspers and corals we have slices of kidneys, spleens, hearts, livers, &c., some in their natural state, some as altered by disease.

As we have no observations to make on this discovery satisfactory to ourselves, we must leave it to the reflections of our readers and to the testimony of time. We may, however, take the opportunity of making known to our readers another and more intelligible method of preserving dead bodies, also discovered by an Italian, or rather Sicilian physician, Dr. Tranchina, of Palermo. The results of this method were first published in the Sicilian journal *La Cerere*, in May, 1834; but the actual method was first made known and openly practised by the author on the 11th May, 1835, in the military hospital, *Della Trinità*, at Naples. The whole operation consists in the injection of the body, through the carotid artery, with a solution or mixture of two pounds of arsenic in twenty or twenty-four pounds of water, or spirit of wine, coloured with a little red lead or cinnabar; and in the introducing, by means of a trocar, into the abdominal cavity the same solution, in cases where putrefaction had made some progress. In some cases it appears also that the solution is injected into the anus, nostrils, &c. By this process the body is kept fresh, flexible, without smell, and of its natural colour, during more than two months; after which it gradually dries, hardens, becomes of a darker colour, and can be preserved for years. For this discovery, the great importance of which is self-evident, and for its public disclosure, Dr. Tranchina has been presented by the King of Naples with the sum of 3000 ducats, has been raised to the dignity of knight of the order of Francis I., and appointed military surgeon of the second class.\*

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\* Osservatore Medico, No. ix. x. xi., Aprile, Maggio, Giugno, 1835. Omodei Annali, Luglio ed Agosto, 1835.

## PART THIRD.

## Selections from Foreign Journals.

## MORBID ANATOMY.

*Case of Aneurism of the Thoracic Duct.* By Dr. ALBERS, of Bonn.

THE patient, a man of fifty-one, died of abscess of the liver. On examining the body after death, Dr. Albers found, in the region of the solar plexus, amongst several hard cartilaginous tumours, an elastic soft one, with a half-transparent tegument. It was knotty, and about the shape of a fig. At first he took it for an hydatid; but it was soon discovered that it was bound by membranous bands in several places, and that a canal led into it, both above and below. It contained a quantity of fluid lymph, in which flaky matter was suspended. The internal surface of the tumour was smooth and uniform. A sound could be passed up the canal, both superiorly and inferiorly. In the latter direction its course was followed, and it soon became evident that the tumour was an aneurism of the thoracic duct. Its parietes were thicker and firmer than those where the duct had not lost its normal caliber.

Dr. Albers has only seen one similar case, viz. a dilatation of the cisterna chyli, found at the examination of a dropsical patient.

It is singular that the thoracic duct is not oftener affected by the diseases of the surrounding organs. How often it is compressed in the scrofulous and consumptive, by enlarged glands, tumours, &c. But these compressions are not attended by corresponding dilatations, as is the case with arteries and veins. Dr. A. has seen a case in which the thoracic duct, in the middle of its course, had been reduced by pressure to such a small caliber, that it would not admit even a bristle. In another case the canal was altogether obliterated; but in neither was the caliber of the canal below the narrowed part altered by the compression. (See also Rokitanaki, *Austrian Annals*, vol. xvii. p. 441.) The cause of this absence of dilatation in cases of compression lies, doubtless, in the nature of the fluid, in the weakness of its current, and also in the fact that there must be more branches of the thoracic duct anastomosing with the venous system than is generally supposed. A proof of this is, that in children in whom the caliber of the duct has been materially narrowed, no emaciation has followed in consequence. Wutzer has discovered a branch of the thoracic duct leading into the vena azygos. The most frequent cases of dilatation of lymphatic vessels are those in which they contain tuberculous, scrofulous, and cancerous matters. Numerous descriptions of such cases are found in the works of Cruveilhier and Carswell.

*Hannoversche Annalen*, B. ii. H. 1. 1836.

*On the Anatomical Condition of Diseased Bone.* By Professor GEDDY, Surgeon of the Hospital St. Louis.

IN a previous essay, the author published his views on the normal structure of bone; without a correct acquaintance with which, he considers that there can be no accurate knowledge of their morbid conditions. A note appended to the present essay contains the following outline of his opinions on this subject.

Bones consist of—1. The *compact tissue*; composed of very fine and compressed bony tubes, lying parallel to the axes of the long bones, and sometimes in the flat bones converging towards the original centres of ossification. The furrows which are seen on the surface of long bones and of some of the flat bones, penetrate fre-

quently into the little canals of the compact tissue, and even into the diploë. 2. The *canaliculated tissue* is that which is inappropriately termed spongy tissue. It is an assemblage of little longitudinal canals, perforated by apertures in their parietes, so that they communicate with one another. 3. The *interrupted canaliculated tissue*. Here the canals are so interrupted by laminae of bone, that the appearance would justify the terms areolar or cellular. This tissue occupies the epiphyses of long bones, short bones, and the interval of the laminae of flat bones. 4. The *reticular tissue* is a network of solid bony fibres, occupying the medullary cavity of the long bones, and of such of the short bones as possess these cavities. The vessels consist of very delicate plexuses, with extremely thin parietes, spreading through all the little canals, and anastomosing through the apertures which have been mentioned, and in the midst of the medulla which envelopes them. The medulla is a cellulo-adipose tissue, of the same nature in the medullary and in the canaliculated cavities: it is simply less in quantity in the very fine vascular canals than in the larger ones, and than in the medullary cavities in particular.

After this brief sketch of the structure of bone, the author proceeds to state that osteitis is of much more frequent occurrence than is generally believed; that all the injuries and most of the diseases of bones are attended with inflammation; and that the existence of such inflammation is demonstrable from the permanence of its effects. This inflammation is rarely simple, the periosteum or cellular tissue connecting the bones with their cartilages being generally implicated in the same diseased action. Osteitis may exist in all the bony tissues; and, whichever may be primarily affected, the inflammation rapidly spreads to the others. Inflamed bones are swollen; sometimes, with loss of weight, at others with an increase of it. They are never found softer than in the healthy state; and the author believes that their fragility has given rise to the idea that they become softened by inflammation. The changes in their structure, from inflammation, are of three kinds.

1. *The rarefying osteitis* in which the bones become lighter and more fragile. This consists in a dilatation of the furrows and of the little canals, and of their vascular apertures. When a bone is universally inflamed, its chief nourishing canal (supposing it to possess one,) acquires double its normal size, and sometimes this canal is extended as an isolated tube in the interior of the bone, as if it were secreted by the artery and vein which it encloses. All the tissues of the bone become dilated. When, by maceration, the soft parts are separated, the osseous portion which remains is as hard as in healthy bone. The distended canals in the interior of the bone are filled with a red medulla, the vessels of which appear to be augmented both in number and size.

2. *The condensing osteitis*. In this form of inflammation, all the tissues become thickened and more dense; but it is occasionally combined with the previous condition; the bone being in some parts more dense, in others more dilated, than in the healthy state. When cut, the compact tissue appears like a piece of stone which has been sawed; a greater degree of condensation is noticed in the other tissues, and sometimes the medullary canal of the long bones is obliterated by a deposition of stony hardness.

3. *The ulcerating osteitis*, or caries, is accompanied by more or less suppuration. This inflammation is superficial, and presents a rough, worm-eaten surface, or deep sinuous and rugged ulceration. Hitherto the nature of these conditions has not been recognized. The roughness and worm-eaten structure are dependent on a morbid increase of size of the openings in the vascular furrows, and on the formation of irregular apertures by absorption of the bony tissue. Beneath the surface of caries exists an inflammatory condition of the bone, with all the anatomical characters previously described. Splinters of bone, of various form, are also separated by inflammation; and the changes produced by this process are evident in the exfoliations. These splinters have the rarefied structure, quite distinct from that which is seen in the compact tissue of necrosed bone; the processes of caries and necrosis being essentially different. The portions of bone separated by caries are not, as has been lately asserted, destitute of gelatine; but preserve the same form when their calcareous constituents have been dissolved by muriatic acid.

Periosteal inflammation frequently attends on osteitis; the periosteum becoming

thickened, losing its adherence to the bone, softened or indurated, and injected by vessels, both more numerous and larger, than in the healthy state. Bony concretions are formed on the surface of the bone itself. These are of various forms and sizes, and are secreted by the inflamed membrane. When osteitis is complicated with inflammation of the medullary tissue, (and by this term is meant the whole adipose tissue of bones,) the medulla is either partially or entirely red and inflamed; the colour varying in depth: it may be either softened or hardened, and in some cases has an ecchymosed appearance, or contains small purulent depositions. When the bone is inflamed at its articular portions, and is accompanied with diarthrodial inflammation, the cellular tissue uniting the cartilages to the bone, and which is invisible in the normal state, becomes considerably thickened; the cartilages become absorbed, partially or entirely, and sometimes perforated, so as to allow the thickened cellular tissue connecting them with the bone to project through these apertures. When the cartilage is entirely removed, the articular extremity of the bone appears to be covered by a thick, velvety, tomentose membrane, of a reddish-brown or grey colour.

In osteitis with hyperostosis, (commonly termed exostosis,) there is partial or general increase of the size and thickness of the bone; and its structure may either be more compact or more dilated than in the normal state; and some portions of it may be the seat of the ulcerative inflammation. Some of the compact hyperostoses may, however, arise independently of inflammation, and depend simply on considerable increase of nutrition. Within the dilated structure of partial exostoses, there occasionally form large cavities, occupied by accidental morbid products, such as encephaloid or colloid matter, which have a great tendency to degenerate into cancer,—that is to say, to become inflamed, soften, ulcerate, suppurate, and to assume all the symptoms characterizing cancer. Various other morbid tissues are formed in these partial exostoses. Their first effect is to produce absorption of the bony matter, and this may go on until the periosteum alone limits their extent. This membrane, being irritated, secretes more bony matter around the morbid formation. From these changes arise the cellular exostoses and osteo-sarcoma. The author concludes his article by noticing the frequency of osteitis in all wounds of bones, fractures, dislocations, which have remained unredressed; diseases of joints, and in ulcerations which extend almost to the surface of bones, and which leave traces in their substance which are never removed,

*Archives Générales de Médecine. Tome x. Février, 1836.*

## PHYSIOLOGY.

*On the Physiology of Vomiting: and on the Causes of its Difference in Adults and Children.* By Professor C. H. SCHULTZ, M.D.

THE great frequency of vomiting in infants at the breast, and the spontaneousness and facility with which this process takes place, are well known. It seems to occur without any previous nausea, as the infants, generally speaking, exhibit no signs of uneasiness. The case, as is well known, is very different with adults, in whom nausea and retching will, in certain cases, exist in a great degree for days, or even weeks, without any evacuation of the contents of the stomach. The facility of vomiting in general remains with children for some years after weaning, although this is effected with somewhat greater difficulty than during the period of nursing. The causes of this difference in the readiness to vomit at different ages has not, as far as I know, been yet closely investigated.

To enable us to prosecute this inquiry with advantage, it is necessary that we should have a perfect understanding of the causes of vomiting in general; and to this point I shall address myself in the first place.

The opinion first advanced by Boyle, that, in the act of vomiting, the stomach is passive,—the evacuation of its contents being effected by the contemporaneous contraction of the abdominal muscles and diaphragm,—has been adopted and powerfully advocated by physiologists of the greatest name, more especially of late years.



Chirac confirmed the fact stated by Boyle, that no convulsive motions are felt in the stomach during vomiting in the case of dogs, when the hand is placed in contact with the organ through a wound made in the abdomen. Van Swieten, Senac, and others, adopted the opinion of Boyle on other grounds; and, in later times, Magendie has proved beyond question, that, in the case of dogs, not only are no convulsive motions of the stomach *felt* during vomiting, but none are *seen* when the stomach is laid bare; and, moreover, that when the abdominal muscles are removed, and the contractile power of the diaphragm destroyed, the act of vomiting in dogs, if not entirely prevented, is, at least, rendered extremely difficult. It accords with this view of the process that, in man, vomiting becomes easier in proportion as the stomach is distended, and is thus more exposed to compression between the above-named muscles.

The objection to this explanation, derived from the fact that vomiting takes place in birds and amphibia which have no diaphragm, as also in certain cases in the human subject in which an abnormal position of the stomach had removed it from the pressure of this muscle, is not valid, since in such cases the thoracic viscera, during inspiration, present sufficient resistance to allow the stomach to be compressed between them and the abdominal muscles. It is indeed obvious, that the same muscular action takes place in the act of vomiting as in labour, cough, and the evacuation of the bowels and bladder, &c.; and that the discharge of the contents of the stomach by repeated fits or impulses, corresponds exactly with the spasm-like contractions of the abdominal muscles and diaphragm.

It has not, however, escaped the opposers of Magendie's theory, that if vomiting were effected exclusively by the abdominal muscles and diaphragm, it ought to be a purely voluntary act; whereas, it is known that only very few animals, such as frogs and birds of prey, can evacuate the contents of the stomach at pleasure. It results from this fact alone, that the before-mentioned muscles are not exclusively those which are active during vomiting; and we are hence led back to the old doctrine of the anti-peristaltic motion of the digestive organs. Maignault and Beclard have attempted to prove that, although the stomach is not spasmodically contracted, still that the œsophagus is thus affected, by fits, during vomiting in the dog; and every one who has experienced vomiting in his own person must have felt that these reverse spasmodic efforts of the muscles of deglutition commence in the pharynx. These gentlemen were further of opinion that, in the act of vomiting, no anti-peristaltic movements take place in the stomach, but that this organ presents a state of equable tonic contraction, and that it is only by means of the fitful contractions and expansions of the œsophagus, aided by the action of the abdominal muscles, that the stomach is emptied of its contents.

While acknowledging our obligations to the French investigators, we must admit that there are many phenomena attending the act of vomiting which prove their theory to be at least insufficient. If the œsophagus and abdominal muscles are the only parts active during vomiting, how is the phenomena of fecal vomiting to be explained? I consider this morbid state sufficient proof in itself that an anti-peristaltic action both of the intestinal canal and stomach does exist, while, on the other hand, no one can deny that there may and do exist contractions of the abdominal muscles, diaphragm, and œsophagus, without any vomiting. This is evident in the case of the horse, rabbit, hare, guinea-pig, and several other herbivorous animals, which cannot be made to vomit even by the strongest emetics, although the strongest retching and contractions of the abdominal muscles take place, and although they possess the same organs as the dog, which vomits on the slightest occasion. It is the more important to investigate the cause of this difference in animals, as it will lead to the explanation of the much greater facility of vomiting in children than in adults.

The cause of these differences lies in the particular shape of the stomach in different animals, a circumstance, as far as I know, hitherto unnoticed by comparative anatomists; and the same cause operates in producing the difference in the facility of vomiting in the infant and the adult; since there exists the same analogous difference of form between the stomach of the child and the adult man, as between the stomach of animals which vomit with facility, such as the dog and cat (and we may

say carnivorous animals in general), and the stomach of those which vomit not at all or with extreme difficulty, as the horse and rabbit, (and herbivorous animals generally.)

Before proceeding further in the enquiry, I think it necessary to state that my experiments and observations lead me to decide positively in favour of the existence of antiperistaltic motions of the stomach during the act of vomiting. Boyle, Chirac, and the recent observers in France, hastily concluded that, because they could discover no *convulsive* movements of the stomach that therefore there were no antiperistaltic movements of any kind: they found the stomach contracted and motionless. I admit that there are no convulsive movements, but I cannot concede that in the dog, for instance, the stomach is at rest during the act of vomiting. On the contrary, I maintain that decided antiperistaltic movements are perceptible, but these are not stronger than the ordinary peristaltic motions of the same organ. They are, moreover, not very distinct in the middle portion and fundus of the stomach, but only at the two extremities near the cardia and pylorus. The whole pyloric portion is strongly contracted when the cardiac portion expands; and, while this is going on, there is no perceptible motion in the fundus and larger curvature, and assuredly no convulsive one. But, it may be asked, what considerable effect can so slow an antiperistaltic motion have in vomiting? The answer is briefly this,—that, by this anti-peristaltic motion, (no doubt assisted by the abdominal muscles,) the *direction* is given to the food which is to be ejected by the act of vomiting, or which is to be forced from the intestines into the stomach in the case of *fecal vomiting*. If the abdominal muscles alone acted on the perfectly passive stomach, the food might, by this pressure, be driven into the intestine as well as into the oesophagus; if, then, the contents of the stomach are to be ejected in a particular direction, it is requisite that the cardiac and pyloric portions should possess a distinct active motion.

I now return to the various forms of the stomach occasioning the differences in vomiting: and here I may take for granted as understood what I have detailed in the work '*De Alimentorum Concoctione*,' concerning the forms of the stomachs of carnivorous and herbivorous animals. It is demonstrable that a child's stomach is as different from that of an adult as a pole-cat's is from that of a rat; and, if the difference between the form of a child's stomach and that of an adult has not been sooner recognised, it is only because their very different functions and importance in the preservation of life had not previously been suspected; for this difference will not fail to strike every one as soon as his attention is directed to it. But, to make these differences still more conspicuous, I will introduce an outline of the form of a child's stomach, and that of an adult.

Fig. 1.

The stomach of a child (Fig. 1.) is more of a conical form, drawn out lengthwise, and gradually narrowing towards the two extremities, inferiorly towards the pylorus (*b*), superiorly towards the cardia (*a*). The oesophagus is inserted into the fundus at the left extremity, and at a distance from the pylorus; the small curvature is stretched out lengthwise (*c*), the large curvature (*dd*) is less developed, and runs almost parallel with the small; in short, the stomach of a child resembles that of the carnivorous mammalia.

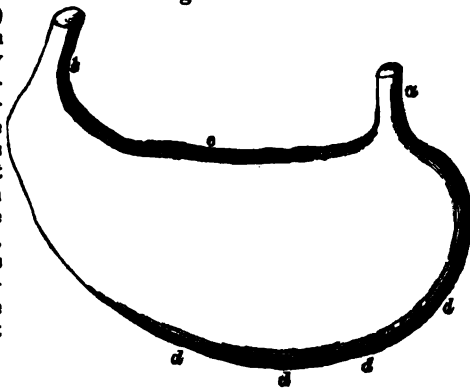
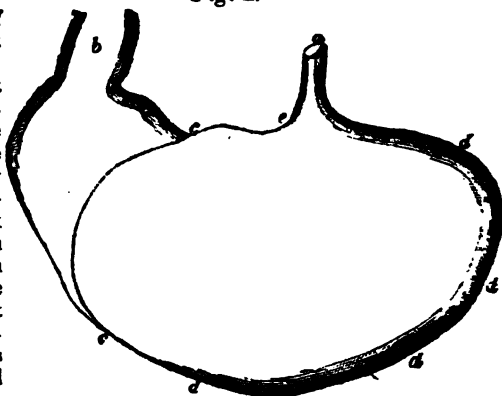


Fig. 2.

The form of the stomach of the adult is very different (Fig. 2): it is more circular; the œsophagus (a) is not inserted into the left extremity, as is the case with the child's, but into the middle between the left extremity and the pylorus (b). The pylorus itself is drawn back towards the cardia, and both brought very near to each other; on this account, the small curvature is very short (cc,) while the large curvature, on the contrary, is disproportionately extended (ddd,) forming not only the



entire lower circumference of the stomach, but also surrounding that part of the fundus situated between the cardia and the left extremity; so that the large curvature alone forms about four-fifths of the whole circumference of the stomach. It must also be added, that the fundus does not pass into the pyloric portion gradually and gently, as is the case with the child's, but that the latter is separated from the former by a sort of neck or contraction (cc), sometimes more, sometimes less, strongly marked. In consequence of this the left part of the stomach assumes an almost circular form, and the whole very much resembles the form of the stomach of the rat or rabbit, although in a less marked degree than in these animals.

To each of these different forms of the stomach, an entirely distinct motion, peristaltic as well as antiperistaltic, has been given. In the child's stomach, where the small curvature is extended almost parallel with the large one, the food is expelled with nearly equal power by the undulating motion of both curvatures, and forced towards the pylorus by the peristaltic and towards the cardia and œsophagus by the antiperistaltic. In consequence of this, vomiting in children is very easy, because the œsophagus is situated at one extremity of the stomach, towards which the food is forced, at the same time that the pylorus closes and the cardia opens. But the process is very different in the stomach of the adult: in this, the small curvature is so much shortened, and the large one so much extended, that the food is not equally propelled from both sides, but the motion is almost confined to one side, and is effected principally by the large curvature, which embraces almost the entire circumference of the contents of the stomach; by this partial action, the contents of the stomach are moved rather in a rotary direction, which completely stops towards the contracted pyloric portion, turning round in the fundus from the left side to the right when urged by the peristaltic motion, and from the right to the left when by the antiperistaltic. In consequence of this, during the act of vomiting, the antiperistaltic motion does not direct the food towards the cardia and œsophagus, but merely communicates to it a motion contrary to that given by the peristaltic; and herein the reason is to be sought why, notwithstanding the pressure of the abdominal muscles and the diaphragm, the contents of the stomach are so difficult to be voided, and that, in many herbivorous animals, where the small curvature is still more shortened, the evacuation is impossible. The evacuation of the contents of the stomach of an adult can be effected only by a strenuous effort, produced by the strong pressure of the diaphragm and abdominal muscles at the same time that the œsophagus opens and shuts alternately; the stomach itself would be incapable from its antiperistaltic motion alone to discharge its contents upwards. In this respect there exists a completely different state of things in the pyloric and cardiac portions of the stomach. The pyloric portion from the point (cc,) where it is so much reduced in diameter, exhibits a more regular or intestine-like form of both curva-

tures, and the contents are on that account easily urged forwards into the duodenum; but, in the other direction, the contemporaneous motion of the two sides ceases beyond the contracted part, becoming, as already stated, rotary, in the cardiac portion.

These details satisfactorily explain the differences so often referred to between children and adults. The former can discharge the contents of their stomachs by the antiperistaltic motion alone, without any perceptible assistance of the abdominal muscles; and the least pressure from these will increase the discharge. Animals whose stomachs are cylindrical, and in which, consequently, the ordinary relation between two curvatures entirely ceases, such as frogs or fishes, can, as it appears, with facility empty their stomachs by means of the antiperistaltic motion alone, without any cooperation of the abdominal muscles; and it is thus that they often throw up pieces of food merely on account of their inconvenient position in the stomach, and swallow them again in a more acceptable direction; even dogs after having swallowed a piece of bone frequently adopt a somewhat similar method. The human stomach in the earlier stages of its formation puts on the cylindrical form of the stomach of fishes and amphibious animals; in the embryo it appears only as a slight enlargement and elongation of the œsophagus in the abdominal cavity, with the cardia directed upwards and the pylorus downwards, as is the case with frogs. The stomach assumes its horizontal position only at a later period when the curvatures become developed.

There are naturally an endless number of transitions and intermediate stages of development, between the cylindrical, conical form of the stomach of the infant and that of the adult; and these numerous transitions will be accompanied by as many degrees of facility or difficulty in vomiting. What appears to me particularly interesting in a medical point of view is, that the round stomach of the adult is frequently seen in children of a diseased or merely of a disordered condition at a much earlier age than usual, and that such children also generally vomit with much more difficulty. I have had opportunities of making this observation in several post-mortem examinations of scrofulous children; and in one instance was able to describe before death the probable form of the stomach, from the extraordinary difficulty with which the child vomited. On the other hand, the fundus of the stomach of adults is not always found to extend, in a like degree, beyond the insertion of the œsophagus towards the left side. There are human stomachs with the fundus so much developed, as to be with difficulty distinguished from those of herbivorous animals; and others, again, which approach nearer to the form of the dog's stomach from their imperfect development.

The question naturally here suggests itself:—What is the cause, not only of these differences, but of the changes in general, to which the stomach is subject at different periods of life? To me it appears that the cause is principally to be sought in the nature and quantity of the food. The cylindrical form of the stomach in children continues only while they are fed on milk, consequently on purely animal food; as soon as they receive vegetable food in any quantity, the fundus begins to develop itself. On that account, even in the first year, a strong development of the fundus is found to have taken place in such children as have been weaned immediately after their birth and fed on soft pap made of flour, potatoes, or bread. The influence of the food on the form of the stomach is distinctly observable in older persons. The stomachs of such persons who live principally on potatoes and other vegetables are found to resemble most those of herbivorous animals; while the fundus in individuals who live more on rich animal food is less developed. I have shewn in my paper, '*De Alimentorum Concoctione*,' that the stomach of dogs and cats (animals purely carnivorous,) will assume the circular form after they have been fed for some time on mashes of potatoes, meal, and bread; but that their stomach will retain its original oblong form if fed on animal food alone. On this account, the round form of the stomach observed in the domesticated carnivorous animals is never found in wild animals of the same class, such as, for example, the pole-cat.

Man, as an omnivorous animal, certainly possesses the type of the more rounded form of the stomach; but the extent of the development until it attain the form of the stomach of animals purely herbivorous, will, however, in a great measure, be

determined by the degree of preponderance of vegetable over animal food; and the development may be increased till it become morbid. The reason why vegetable diet should develop the fundus to such a degree that the stomach assumes the circular form, (and the rotatory motion be in consequence given to its contents,) is, I believe, the following: I have shewn elsewhere, in speaking of animals, that vegetable food is of much more difficult digestion, and consequently is retained much longer in the stomach. The food requires to be moved about longer, and not immediately propelled into the intestine; hence the rotary motion, by which it is agitated in the stomach without being directly emptied into the pylorus. By this action the digested part of the vegetable food is gradually separated by layers on the surface of the mass, and is conducted into the pyloric division, in order to be passed into the intestine, while the undigested part continues in rotary motion in the centre of the stomach. In carnivorous animals the process is very different: the animal food, being soon digested, is directly propelled towards the pylorus by the united action of both curvatures, and does not require to undergo a prolonged rotary motion; whereas, if vegetable food be received in a stomach so constituted, it will necessarily pass into the intestine in a raw or only partially digested state. On the other hand, herbivorous animals cannot perfectly digest animal food unless the form of the stomach undergo a change, as, by long detention in the organ, the food, instead of being digested, becomes putrid. The attempts, therefore, which have been made in some places to feed sheep, horses, and oxen, on fish or other animal matter, must ever fail. The enquiry whether the stomach of these animals might not be transformed by gradually accustoming them to animal food, is foreign to the present subject. But, even with dogs and cats, experience shews that purely vegetable food does not succeed, as it almost invariably renders them subject to the mange, (*räude*).—But, to return to the cause of vomiting in children and adults.

Although the form of the stomach plays the principal part in vomiting, there seems to be another agent strongly cooperating with it, namely, the sensibility of the organ itself, particularly in respect of the nausea or sickness which produces the motions of the stomach in the act of vomiting. This is the reason why I do not assert that lunatics, who generally vomit with so much difficulty, experience this difficulty only because they have a herbivorous stomach; in such a case, we must consider the state of the brain as well as the sensibility of the stomach; the torpidity of the brain being often such as not to admit the perception of nausea: these persons, perhaps, frequently do not vomit because they do not experience nausea.

We have been endeavouring to shew that the food is detained longer in the stomach of the herbivorous form, because it is kept longer in action there, without passing directly into the intestine, and that this form is adapted only to the more indigestible quality of vegetable food. If a stomach so constituted be suddenly filled with animal food, this food will be detained longer by the rotary motion than is necessary for the purpose of digestion, and the consequence will be, that the whole process will be disturbed, and the food, instead of being digested, will undergo a chemical decomposition. From this we may also conclude, that nothing will disorder the stomach sooner than sudden repletion with animal food after long use of a diet in which the vegetable preponderated. Excess of vegetable food is much less injurious in such cases, as undigested vegetable matter is, in the intestine, not so easily decomposed, and excites the peristaltic motion more than animal food. It follows that we ought carefully to avoid sudden change of diet from vegetable to animal. To this may be ascribed the greatest part of the gastric diseases prevalent in summer, and still more in autumn, when the stomach, after having been for some time accustomed to vegetable diet, is suddenly charged with large quantities of animal food.

The only remaining question is, whether we can produce excessive retching by larger doses of emetics, as a substitute for the want of peristaltic expulsive motion in persons having stomachs of the herbivorous form? On closer observation, however, we shall be induced to believe that large doses of emetics in such cases would fail in producing the intended effect. There are persons in whom very powerful emetics would sooner produce death than vomiting, as is the case with rabbits. In such cases, I think, the greatest assistance will be afforded by such means as will facilitate vomiting, by increasing the pressure of the abdominal muscles on the stomach, such as

filling it with fluids, particularly gelatinous fluids, or any thing calculated to increase the elastic tension of the parts: perhaps, after all, the best means of facilitating vomiting in stomachs of such a conformation will be starch-flower or arrow-root boiled to a paste, as formerly recommended by Hufeland.—*Hufeland und Osann's Journal. März, 1835.*

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*On the Influence of the Nerves on the Development of the Muscular System.*  
 By Professor ANTONIO ALESSANDRINI.

IN 1829, Professor Alessandrini published an account of the dissection of a calf whose medulla spinalis terminated about the tenth dorsal vertebra, and in which all the voluntary muscles were absent which are usually supplied by those spinal nerves which were wanting. Thus there were no muscles to the hinder limbs, and some of the muscles of the trunk were but half developed. On the other hand, all those parts essentially composed of cellular tissue, the integuments, adipose tissue, vascular system, aponeuroses, bones, &c. of the hinder extremities, were natural.

The conclusions which he then came to on the influence of the nerves in the growth of muscles were strengthened by the following case of monstrosity which has recently fallen under his notice. The vertebrae and spinal marrow of a young pig, removed from the uterus of a sow killed for food, who had gone with young her full time, were found to be deficient below the fifth dorsal vertebra. The head, neck, anterior part of the chest, and fore-legs were natural and muscular; but the posterior part of the thorax and abdomen had the appearance of a large ovoid bladder with strong aponeurotic walls, to whose fundus and lower extremity were attached the ossa innominata, which sustained the hinder limbs. All those parts of the thorax and abdomen, as well as of the hinder limbs, which were deprived of nerves, had no voluntary muscles. The viscera of the thorax and abdomen were natural, as well as the par vagum and grand sympathetic. The muscular coat of the intestines was very visible. Another instructive peculiarity was, the existence of an isolated portion of the vertebral column of the coxygeal or caudal region, containing a small cylindrical piece of the medulla spinalis, from which sprang some delicate nervous filaments distributed to muscular fibres, representing some portions of the caudal muscles.

From these two cases the Professor deduces the following propositions: 1. That the nerves contribute to the formation of muscular fibres more than the blood-vessels, as the latter were regularly formed in the hinder limbs. 2. Muscular fibre is not only formed by the influence of the nerves of animal, but also of organic life. 3. The existence of an isolated portion of the spinal marrow in the pig demonstrates that the various nodi or centres of the cerebro-spinal axis are formed independently of each other, so that it cannot be said that one is the production or prolongation of the other.

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MEDICINE,  
 PATHOLOGICAL, PRACTICAL, AND THERAPEUTICAL.

*On Pneumonia of the Old, by MM. HOURMANN and DECHAMBERE.*

[This is a continuation of the researches made at the Salpêtrière on the diseases of the aged. The previous memoirs on the natural changes of structure and functions of the lungs, on the pulse, &c. we have analysed in No. I. p. 233, and No. II. p. 553.]

1. *Anatomical characters.* Pneumonia is the most frequent and dangerous of the acute diseases to which the old are subject. Its diagnosis, so evident in the adult, is difficult, as the affection is often overlooked from the apparent mildness of the general symptoms; or obscured from the utter prostration caused by the attendant adynamic fever. The changes it produces are peculiar. Independently

of inflammation, the vessels of the lungs of the old are always more or less congested, so that it is always difficult to establish the existence of pneumonia, in its commencement or even progress, in the dead body, if the symptoms during life have not been carefully observed.

I. *Simple congestion.* There are three degrees: in the first, the lungs, which are intensely red, both crepitate and swim completely; they contain a great quantity of bloody, frothy serum; there is no change of consistence: in the second degree, their colour is deeper: in the third, they are livid, the lobules are nearly confounded; there is an increase of volume; their cohesion is diminished; a blackish fluid with bubbles of air escapes from an incision; they slightly crepitate, and float less high in water. Dried sections of congested lungs show that the cells are still permeable, but contracted in proportion to the congestion; this is much less marked when the cells are torn and irregular. *Cæteris paribus*, the arborizations on the sides of the cells diminish in proportion to the rarefaction of the tissue, as might be expected from the previous observations on structure, (No. 1.)

II. *Congestion with imperviousness of the pulmonary parenchyma.* There are two varieties; one in which the granular appearance, regarded as peculiar to pneumonia, is absent, and another in which it is well marked:—*1st form.* The pulmonary tissue is of a dark colour, often blue or black, and a section is homogeneous, and remarkably polished; sometimes it is elastic like caoutchouc; at others easily broken up. On cutting the lung, a fluid or viscid liquid escapes, often reddish, but not frothy. Compression increases the suppleness and elasticity of the first portions, and, if after compression they are dried, the cells reappear, without having experienced any other change than contraction, which is seen by a lens to be produced by congestion of the vessels running in the intervals, separating the cells, thickening the membranes dividing them, and less evident in the cells themselves. *2d form. (Red hepatization.)* The granulations are either regular, well marked, and much larger than in the pneumonia of adults, or less defined, running into one another. Generally there is less friability than in adults; the lung being resistant and easily cut into thin and flexible slices; it is not so heavy, nor does it sink so deeply. This lightness may be owing to the rarefaction which the lungs undergo with age.

III. *Suppuration of the Lung.* There are two varieties; one without granulations, and the other granulated. In the first form there are two varieties: (1,) lines or patches of a greyish white colour are seen in the middle of the congested lung, which appear to be pus beneath a fine membrane: on making pressure with the nail, the pus can be displaced, and made to pass into the pulmonary tissue as far as the surface where it appears to transude; the texture then regains its suppleness, and on drying it the cells reappear. (2.) The texture appears like granite, being a singular mixture of red and dull white; the pus being deposited in spots of one or two lines in diameter. Pressure with the nail does not displace it, but it is removed easily on the point of a lancet, and is of the consistence of coagulated albumen, and never fluid. When thus extracted, it is evident that it is contained in irregular cells whose walls are of a deep red colour. It is never prolonged into the small bronchial ramifications.

*Suppuration with granulations (Grey hepatization,)* is much more frequent. The granulations are larger than in the adult, though less than in the red stage. The granulations may disappear and be replaced by small abscesses, but extensive abscesses of the lungs are excessively rare. The lung is extremely friable, the slightest pressure reducing it to a pulp, from which pus flows in abundance; it also escapes from a simple incision. In some lungs there were small groups of grey granulations, not mixed with red, and surrounded by healthy tissue. This was the general description of changes in pneumonia, but there were some peculiarities worth noticing. The diseased lung, especially if it belonged to the first type, (see No. 1,) generally was considerably increased in size. The disease, whether consisting of congestion, hepatization, or suppuration, occupied generally a very large portion of the lung, so that it was extraordinary how life could have been carried on. In one body, the right lung and inferior lobe of the left were throughout in a state of grey hepatization, whilst the upper lobe of the left lung was gorged with

blood and frothy bronchial secretion. The granulations were often in groups towards the posterior border of the lung.

The deposition of semi-concrete matter without granulations was never observed except in lungs of the third type, and in these red or grey granulations were never observed. They only existed in lungs of the first and second type, and in these they varied, being regular and distinctly circumscribed in the first, which is characterized by the regularity and rounded form of the cells, and irregular and almost confluent in the second, where the cells are of a more irregular figure.

From these facts it may be inferred, 1st, that the pus, which is capable of being displaced by the pressure of the nail, is seated externally to the air-cells; otherwise, instead of its passing into the interior of the parenchyma, it would escape in isolated drops from the incised surfaces. It is in a situation analogous to that of the air in intervascular emphysema of the lungs. The sanguineous congestion which attends it (as desiccation proves,) consists of engorgement of the vessels ramifying between the cells. 2d. The granulations, on the contrary, appear to be seated in the cells themselves, as they are rounded or irregular according to the peculiar change in the anatomical structure of the cells, and are not observed in the third type, where the cells are completely disorganized. Compression and desiccation give further proofs of this fact; for by these means the granulations cannot be changed, and the cells cannot be made to reappear, except in those cases where the grey granulations are not friable; where, when compression is employed, small drops of pus escape from the nearest bronchial tubes, and the granulation disappears; thus again proving its situation. The impossibility of removing the red granulations and those grey granules which are friable, by means of compression, &c., shows that they are not merely produced by cells distended with fluid, but that they are solid.—The next enquiry is as to the nature of these changes.

1. Hepatization without granulations.—M. Piorry has demonstrated that, owing to the diminution of the vital contractility of an organ, and in proportion to its spongy parenchyma, the blood abandoned partly to the laws of gravity may, notwithstanding the motions of circulation, accumulate in dependent parts, and stagnate there. This can be constantly verified at the Salpêtrière. It renders it difficult to judge whether congestion is active or passive. Friability is not a proof that the congestion is active; for, although it is an effect of inflammation, yet it is sufficient that a patient, or even a corpse, should lie some time on one side to produce both congestion and friability of the corresponding part of the lung. Even among old asthmatics, who pass the last days of their life in a sitting posture, the base of the lungs is very commonly congested and friable. The idea of inflammation must not, on the other hand, be rejected from the situation of the lesion, as granular pneumonia undoubtedly occurs in some instances at the posterior edge of the lungs. The congestion may be determined to be of an inflammatory nature when it occupies the anterior surface on the whole extent of the organ, particularly if no obstacle to the circulation exists in the heart or great vessels. But, under such circumstances, MM. H. and D. have only seen the first degree of congestion, and never impermeability without granulations. The nature of this latter change must then be judged by the symptoms; and, in many cases, their sudden attack and acuteness left no doubt of the inflammatory nature of the lesion. When supuration and friability are united, there can be no doubt that they are the effect of inflammation. The deposition of semi-concrete matter is also an inflammatory change.

2. Impermeability with granulations.—Both the red and grey granulations are undoubtedly the result of inflammation, as is proved by their situation and mode of formation.

From the preceding remarks it appears established that, among the old, there are two kinds of pneumonia. The first, marked by congestion and impermeability without granulations, followed by the secretion of pus in the interlobular spaces, is seated externally to the bronchial canals in the laminated tissue separating them. The second kind occupies the canals themselves, and is owing either to a granular engorgement of their sides, or to a deposition of pus in their cavities. If the cavities



are very irregular, granulations cannot be formed. The first kind of pneumonia may be called intervesicular, and the second vesicular.

*Frequency of Pneumonia in the Old.* The difficulty of distinguishing the disease renders rigorously exact statistics impossible, but the following calculation shows that it is the most frequent and dangerous of the acute diseases of the aged. Of 636 cases of all kinds occurring in the Hospital of the Aged during the periods of these investigations, there were 110 dissections in which there was merely congestion of the base of the lungs produced after death, the patients having had no symptoms of pneumonia, but dying of other diseases; 370 patients were cured after having had symptoms of congestion, recognized both by auscultation and percussion; but, it is true, at the dependent part of the chest, and almost always after prolonged decubitus, so that the inflammatory nature of the congestion might sometimes be contested: fifty-three patients recovered from pneumonia attended by such marked symptoms that it was impossible to doubt its nature; fifteen patients had well-marked symptoms, but no examination could be made: in eighty-eight fatal cases, dissection displayed sanguineous congestion of the lungs reaching the degree of complete impermeability or of suppuration.

Of these eighty-eight cases, there were eighteen only of non-granulated or inter-vesicular pneumonia, and purulent infiltration in five. The remaining seventy had well-marked granulations of vesicular pneumonia; so that the vesicular was in proportion to the intervesicular pneumonia as four to one. With regard to situation, if those cases are omitted where it was not observed, and where the base of the organ only or the whole lobes were invaded, it appears that the non-granulated engorgement (intervesicular,) occupied constantly the posterior border, whether with or without suppuration, and that the granulated form (vesicular pneumonia,) occupied the anterior border twelve times, and the posterior twenty-five times. Of these twenty-five cases there were fifteen of pneumonia of the inferior lobe, eight of double pneumonia, and only two confined to the upper lobes; whilst all of the twelve cases were of the superior lobes, except two divided between double pneumonia, and pneumonia of the lower lobe. This will be considered fully under the head etiology.

*State of the Bronchi.* In all cases of pneumonia of the old, the bronchial tubes are red from the epiglottis to their minute ramifications, the tint augmenting as they approach their terminations. There are but few old women whose bronchial membrane is not reddened, whatever may be the kind of death. The quantity, often enormous, of mucus which fills the trachea and even obstructs the larynx is worthy of notice. It is thick, viscid, opaque, of a dull white or grey, sometimes yellow or greenish, and occasionally bloody. This latter colour was chiefly remarked in the months of April of the two years during which the investigations were conducted.

*State of the Pleura.* Of sixty cases of vesicular pneumonia, there were marks of pleurisy in thirty-eight. Of these thirty-eight, there were eighteen in which the left pleura was inflamed, coinciding sixteen times with pneumonia of the same side, and twice with double pneumonia; fourteen times the pleurisy was in the right side, in thirteen of which there was pneumonia of the right side, and in one on the left. Six times there was double pleurisy; of these there was double pneumonia in five cases, and pneumonia of the right side only in one.

*Archives G n rales de M decine. Mars, 1836.*

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*On Gangrene of the Lungs in the Insane.* By J. GUISLAIN, M.D., Senior Physician to the Hospital for the Insane at Gand.

M. GUISLAIN's attention was called to this disease by observing that the breath of a patient, who obstinately refused his food, smelled exactly like the cavity of the chest of a former patient whose lungs were gangrenous; and, after death, the same lesion was discovered. He thus connected together the obstinate refusal to take food, fetor of the breath, and gangrene of the lung; and subsequent experience proved that the two former were symptoms of the latter. Fetor of the breath is also the consequence of prolonged abstinence, and of pulmonary suppurations, but the smell from gangrene of the lung is altogether peculiar. The obstinate refusal

to eat, M. G. considers as an occasional cause of gangrene; it occurs in one-ninth of the insane, and, in more than a thirtieth part of these patients, no care or management will conquer the repugnance. They live twenty, thirty, fifty, sixty days without any food, drinking only cold water; some fast the first days of the week and eat on the others. In but few instances does this arise from a notion that the food is poisoned; it is generally owing to some caprice of the will, dependent on a painful impression. Various fancies confirm this; a child when sulky, and a woman when jealous or spiteful, will not eat: even animals, after losing their master or companion, occasionally refuse all food, and starve. To the debility arising from impoverished blood M. G. attributes the pulmonary disorganization, and he illustrates the influence of a supply of poor blood on the lungs by the effects of the rigorous fasting which some religious communities undergo, the defective and insufficient food of prisons and some charitable institutions, and prolonged abstinence after acute diseases, in producing numerous chronic pulmonary complaints, which (if curable) will only yield to nutritious food and tonics.

The following case illustrates the progress and symptoms of this disease.

**CASE.** In the late political disturbances, an intelligent woman, æt. fifty-four, leading a retired life, was much affected by seeing some armed men fighting below her window. The shock was followed by mental alienation, and she refused to take food. During nine days no persuasions of her family, who put before her food of all kinds, could induce her to eat. From the alteration in her features, her emaciation and melancholy, her family were alarmed, and she was placed in the Institution, the 4th February, 1831, a month after the disease commenced. During this time she had only taken a little milk-soup and weak broth. By the colour of her face only, M. G. recognized her refusal to take food. It was of a brick-red; the cheeks, end of the nose, and lobules of the ears were of a deep brown; pupil dilated; sclerotics of a brilliant whiteness, approaching blue; hair, previously unctuous, was dry, and its colour deteriorated, as well as that of the iris. By force alone, a cup of milk or broth was occasionally taken; but she passed from a state of melancholia to mania; the emaciation frightfully increased, and the face became brown, and the lips, hands, and feet livid as in cyanosis. The smell of the breath was unbearable; expectoration brown, reddish, and streaked with clear blood in considerable quantity, but without pus. The face was so changed that she appeared like a decrepit old woman. She gradually sunk, but during the last few days took the food which was given to her.

*Examination of the Body.* Brain and membranes, and abdominal viscera, healthy: gall-bladder filled with black bile, and the spleen and mesenteric vessels full of very dark blood. In taking out the left lung, M. G.'s fingers penetrated its substance, and there was an insupportable smell. Its posterior surface, towards the upper lobe, was very black, with green and brownish spots: the tissue beneath was so degenerated as to be broken down with the least force: it was infiltrated with a black fetid cruor, like that exhaled from a mortified limb, with here and there purulent flocci. A spherical mass of five inches diameter was reduced to this putrid condition. The bronchi were filled with a reddish, frothy, fetid fluid. Right lung not affected.

M. G. has examined thirteen patients who died of inanition, and in nine of these there was gangrene of the lungs. In one case both lungs were affected; the left lung in seven; and the right in two. Once the gangrene was confined to the anterior surface, but in all the other cases to the posterior and upper part, nearer the spine than the lateral region of the thorax. The pulmonary tissue around the gangrene was injected, but it appeared to be rather the effect of the irritation than the cause of the mortification. In no case was there pain, cough, or dyspnoea; the temperature of the skin was rather cool than hot, and the pulse slower. In all the patients who abstained from food for any length of time, the peculiar hue of the skin was observed which was described in the above case, together with the appearance of premature old age. In no case was the stomach found to be inflamed; it presented no morbid appearance.

Physiologists all agree in stating that, in ordinary cases of starvation, the stomach is inflamed, as if reaction took place: but, among the insane who voluntarily starve

themselves, there is no such reaction, no pain, no cardialgia, and, as they affirm when convalescent, no sensation of hunger. There is none of that debility which comes on invariably in the other cases. Thus, maniacs enter the hospitals after having fasted twenty, thirty, forty days; they walk about, and exercise themselves in different ways, and, although extremely emaciated, live for months, or even years, only swallowing from time to time some mouthfuls of broth. Not only is there no sensation of hunger, but food is either not at all or very imperfectly digested. One patient who had thus refused food, took some at eleven o'clock, and committed suicide at seven; the contents of the stomach were found to be unchanged. The absence of prominent symptoms in this gangrene of the lungs is owing probably to the same want of sensibility as is seen in the digestive organs. The lungs do not transmit to the brain the expression of their sufferings; and there is none of that oppression in breathing, violent cough, and dangerous general symptoms which are observed in ordinary individuals suffering from the same local disorganization. The torpor of the par vagum will explain the absence of symptoms both when the lungs and stomach are affected. It also explains the enormous doses of medicine which are tolerated by the insane, and the obstinate torpidity of their bowels. The nerves of sense are equally torpid. They bear without inconvenience the extremes of heat and cold, and the actual cautery hardly is felt: loud sounds in their ears do not disturb them, and they can look at the sun without blinking.

In this inert state of the stomach, very light food is alone suitable. Neither wine nor soup agrees; but milk, either by itself or with the yolk of eggs, is very useful: on this food M. G. has preserved life for two years. Sometimes whey or barley water should be given at first. The patient's obstinacy more than once has given way after taking a few spoonfuls of milk or broth.

It is an important practical fact that the privation of food has a bad influence on the minds of the insane; they become more and more taciturn, and melancholia often passes into mania. In general a restorative diet produces an amendment.

Too much conciliation is injurious. Persuasion is useless and loses time, and energetic measures are necessary at the least opposition. Very frequently, in a few days, such measures completely remove the disgust for food. The following cases are valuable as regards prognosis, corroborating the opinion of Laennec, that gangrene of the lungs is not always beyond the power of medical skill.

**CASE.** Marie de L., æt. twenty-eight, whose father, uncle, and two brothers were insane, was in a state of confirmed melancholia. After two months she refused all food: after three days' abstinence, force was employed, and, by means of a tube passed down the œsophagus, a very little liquid food was given. The peculiar colour of the face appeared; the strength declined, and, after two months of complete abstinence, she had fetid expectoration of a reddish and thin brown colour, without previous cough or dyspnœa. She then spontaneously began to eat, and gradually recovered her health and sanity. Two years afterwards she was readmitted; she refused to eat and had symptoms of pulmonary disease, of which she died. There was gangrene of the left lung.

**CASE.** A young man affected with melancholia refused all nourishment: if force was used he swallowed the food, but immediately excited vomiting by thrusting his fingers into his pharynx; and, when that was prevented, he managed to vomit by contracting the abdominal muscles. He continued these practices for many months, and gradually sunk. Face of a brown colour, lips livid, breath smelled unbearably; a pint daily of reddish expectoration. When almost at the point of death, he suddenly determined to take some milk and broth after a threat to burn his pole with a red-hot iron. Gradually but very slowly he improved, and eventually was completely restored to bodily and mental health.

*Gazette Medicale de Paris, 16 Janvier, 1836.*

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*On the Nature and Mode of Action of Cantharides.* By Dr. DOMENICO NARDO, of Venice, and Dr. TOMMASO PULLINO, of Alba.

[We regard as most valuable every fact that tends to illustrate and establish the physiological and therapeutical action of medicines on the animal system; and we

are rather disposed to direct attention towards the more extended and closer investigation of the properties of our old remedies, than to hunt after new ones of doubtful efficacy. We have yet much to learn respecting our best known medicines, and certainly respecting that which is the subject of the following pages which contain the more essential parts of two long memoirs.]

*First Memoir.* By Dr. NARDO.

1. Cantharides, when chewed, have not that acrid taste which has been assigned to them, solely from analogy.

2. They will act in an entire state or in powder.

3. The green portion is the only active part of the fly.

4. In this green portion alone is found the *cantharidin*.

5. There is no other poisonous principle existing in the fly.

6. The green principle is analogous to that found in the involucra of other insects having no vesicating powers.

7. The other principles, as the black and yellow substances, are produced by other insects, and are modified by the process followed in their extraction.

8. Cantharidin is a neutral body, unchanged by acids or alkalies; soluble in cold æther, creosote, oils and fats, and in boiling nitric acid and alcohol.

9. It has neither smell nor taste; but, if a small quantity be laid upon the tongue and pressed against the palate, it produces after a time a scalding sensation. The same thing occurs if it be dissolved in æther or oil, which, by aiding its absorption, increases its powers.

10. A very minute quantity of cantharidin is sufficient to excite vesication; for its farther action is arrested the moment that the elevation of the epidermis by the serum removes the absorbents from their contact with it. The vesication, therefore, is not increased either by a larger quantity or longer application of the cantharidin.

11. Cantharidin does not vesicate by irritating or producing any sensible inflammation; (?) its action upon the cutaneous system appears to be limited to the lymphatics, or to a slight stimulus confined to the cutaneous layer below the epidermis, so that the nervous and sanguiferous systems do not suffer at all during the process of vesication. (?)

12, 13, 14. Cantharidin applied to the denuded cutis induces a serous exudation, followed by an atonic suppuration; and acts in the same way that it does on the outer surface, its action is most speedy and painful upon parts most supplied with sebaceous and mucous follicles.

15, 16. Cantharidin is not decomposed when absorbed, and its absorption ceases as the vascular action of the cutis is excited.

17-20. Being carried through the system in an undecomposed state, the cantharidin is eliminated like other foreign matter; but, if the quantity be great, it accumulates in certain parts, and produces its effects according to the nature and susceptibility of the organ. Its stimulating effects upon the urinary passages, and its boasted aphrodisiac powers, are not peculiar properties, but result from the effects of its primary action. Thus, carried along with the urine, it attacks the prostate follicles, producing a state approaching to vesication; and the urine, by increasing this irritation, produces the symptoms of priapism, ischuria, &c. Its poisonous action upon the alimentary canal is produced in an analogous manner, but gives rise to more extensive sympathies.

21. Camphor has no power as an antidote to cantharides.

[Dr. Nardo has given cantharides in various kinds of dropsy, but could never perceive any effect from them. The effects as an aphrodisiac are very uncertain, and usually are only exhibited when they are taken in dangerous doses. The author rather prefers in paralysis of the bladder and incontinence of urine, a weak injection of cantharides.]

*Antologia Medica*, No. VI. Giugno, 1834.

*Second Memoir.* By Dr. PULLINO.

1. Two grains of cantharidin, given at once to a middle-sized rabbit, produced paralysis, coldness, and death in three hours.

2. A grain and a half dissolved in milk caused the same symptoms, and death in an hour and a half.

3. The same dose with m. xv. of cherry-laurel water caused instant death. The rabbit had five hours previously taken m. xx. without injury. Heart empty and flaccid, stomach pale.

4. A fourth rabbit took two grains in solution, with the same symptoms and convulsions of the hind legs. It then took a few drops of ammoniated æther, and one grain of acetate of morphine, at two doses. It revived, but was not lively, and died in twelve days. Stomach reddish here and there; meninges injected.

5. Two dogs of the same age and size, took, the one ten grains of cantharides in decoction; the other twelve grains in powder. The former was paralysed, and died; and, on examination, presented no inflammation of the stomach. The other tried to vomit, was distressed, writhed, and moaned. He was killed in six hours, when the poison was found undigested, and the stomach reddish.

6. Three more rabbits were killed with cantharidin, and two with cantharides. The stomachs of those that drank after taking the poison were uninjured, and the inflammation in those that did not drink was too slight to account for death.

7. The author took two grains of cantharidin at two doses, fasting, and felt a universal shivering and chill down the spine, skin pale, head oppressed, and in one minute the pulse fell five beats. Urine copious in a quarter of an hour afterwards.

8. A fortnight subsequently, he took two grains at four doses. After the second dose he felt a dull pain in the head, and at the next a little vertigo, the skin being cold and clammy. The pulse, after violent action, lost seven beats in a minute. Urine scalding and copious, although but little fluid had been drunk. In the afternoon he took some alcohol, and then ten drops of ammonia in water, when the vertigo ceased and the urine by midnight no longer scalded. Unusual weakness next day.

9. The following are notes of some cases of disease in which cantharides were exhibited:

(1.) *Pleuripneumony*. After two bleedings, the pain continued with bloody sputa of unhealthy consistence. Three grains of cantharides in solution, gradually increased to ten, were taken daily. Continued sweats, urine not increased; sputa healthy, pain gone in sixteen days; eighty-five grains taken.

(2.) *Carditis*. 112 grains taken in twenty days; urine scalding at first, very copious and turbid afterwards.

(3.) *Beating of arteries* of left side of head preventing sleep; had been treated by many bleedings. The patient took one grain of cantharidin in four doses at short intervals. Vomiting, pulse small, rapid, rigors, vertigo, torpor of lower extremities, and other signs of depression. Æther, opium, wine and generous diet, produced a cure.

(4.) *Intermittent Fever* threatening suffocation. Bleeding during the paroxysm, and quinine, were followed by ardent and continued fever, dryness of skin, pains in loins, and ischuria. Fifteen grains of cantharidin taken in eight days at first increased the pain, but not the fever. At first, urine bloody, afterwards bluish, then turbid and abundant. Sweat came on soon afterwards, and a cure followed.

(5.) *Lumbago*. Cantharides rendered the pulse hard. The patient had had gastritis just before. Cantharides applied to the epigastrium denuded of the cuticle did not lower the pulse. Bloody urine, but no improvement.

(6.) *Phlegmasia dolens* in a girl with amenorrhœa. Cantharides cured the swelling, but did not restore the uterine functions.

(7.) *Puerperal metropéritonitis* with lumbar pains and dysuria, cured by cantharidin baths, and mercurial frictions. Urine copious, with some clots of blood.

(8.) *Anasarca* with congestion of the spleen, of three years standing, cured by mercurial frictions and cantharidin, carried to six grains per diem. Urine copious, much viscid perspiration, very slow pulse. The patient fell into a very weak state, which was removed by the use of æther and sherry.

*On the Softening of the Mucous Membrane of the Intestinal Canal in Children.*  
By Dr. DROSTE, of Osnaburg.

DR. DROSTE coincides in opinion with Andral and others that *ramollissement*, or softening, is an idiopathic disease which may primarily affect all the tissues of the body. The mucous membrane of the intestinal canal of children is peculiarly liable to undergo this process at the commencement of the periods of weaning and teething. Romberg, out of fifty cases of this affection, found that

6	occurred from the 1st to the 3d month (inclusive).
17	— — — 4th <sup>th</sup> — 6th — —
7	— — — 7th — 11th — —
14	— — — 1st year to the 2d year.
6	— — — 2d — — 5th —

According to Dr. D., the first symptoms of the disease are frequent stools of a greenish, watery, mucous matter, mixed with yellow flakes, and of an acid nature. It is further accompanied by vomiting of acid matter, cough, impeded respiration, anxiety, perpetual restlessness, frequent crying out and moaning, coldness of the face and extremities, emaciation and debility, and, at last, by convulsions and comatose symptoms. Fever may be present at the commencement, but never lasts till the termination of the disease. The epigastric region is sometimes a little inflated, but never tense; it may be pressed without pain, and the skin is pale and relaxed.

The softening process, of which the above are the symptoms, may be divided into three stages. In the first, the mucous membrane preserves its texture, but loses its normal consistence. This may be the case with the whole of the membrane, or only with patches of it. In the second stage, it is converted into a thin, soft, gelatinous, nearly transparent, matter, which can be wiped away with a sponge, or dissolved by water poured upon it. In this stage, continuity is maintained by the subjacent membranes, though it will always be remarked that these, too, are softer than in a healthy subject. In the third stage, no trace of organization is left in any of the membranes; the intestines are perforated in different places to a greater or less extent, and the internal surface, which is sometimes of a dark red colour, presents here and there traces of extravasated blood.

Most of the modern German pathologists are of opinion, that the cause of this disease is an affection of the nerves which supply the coats of the intestinal canal. This position is principally founded on the celebrated experiments of Camerer,\* in which, after cutting, on both sides, the sympathetic and par vagum of a rabbit, he found the coats of the intestinal canal softened in precisely the same way as in the diseased human subject. Basing his views on this fact, Camerer concludes, that the cause of the disease under consideration is an inflammation of the above-mentioned nerves, terminating in paralysis. But Droste and the later writers, whilst they allow that the nerves are primarily affected, deny that they are inflamed. They content themselves with asserting that they are in an anormal condition, which may be either of excitement or depression. They ask—and in vain—for the anatomical signs of inflammation. Moreover, the remedy for this disease, the efficacy of which they describe as remarkable, and as acknowledged throughout Germany, proves alone that the nature of the latter cannot be inflammatory. This remedy is the *muriate of iron*. Pommer relates two cases of its decided success. One of his patients was a child of six months old, to whom he gave two scruples of muriate of iron within a week, in a decoction of marshmallow. The other, a child of four weeks old took twenty-four grains in eight days. Both were allowed scarcely any nourishment, except a few tablespoonfuls of warm milk or gruel. Hergt gives, in these cases, musk in conjunction with iron. The day after the first exhibition of these remedies, sickness and diarrhoea had both disappeared. He prescribes also liniments for the epigastric region, and warm aromatic fomentations for the whole abdomen.—*Zeitschrift für die gesammte Medicin, &c. Hamburg.* 1 Band, Heft 4. 1836.

\* See "Versuche über die Natur der krankhaften Magenerweichung, von Camerer. Stuttgart, 1828.

*On the Treatment of Tympanites with Camphor, Musk, and Ammoniacum.*

By Drs. TRADINI and SANTOLI.

I. FROM the inefficacy of other means in this obstinate complaint, Dr. Tradini was induced to try camphor in considerable doses.

A man, of forty-five, was annoyed for a week previously, from his abdomen being tumid, tense, and resonant; an intercurrent affection on an old obstruction of the liver. The following pills were prescribed:

R. Camphoræ subtiliter pulver. gr. vj.  
Extracti cinchonæ offic. gr. viij. M.  
fiat pilula omni quarta horâ sumenda.

He was ordered a nutritive diet, and frictions with warm flannel over the abdomen. Before he had taken twenty pills he was entirely relieved, but he was directed to take one daily for the following eight days. During the use of the medicine, he had a sensation of great heat in the intestines, with obstinate constipation.

The second case was that of the famous improvisatore, Pistrucci. The abdominal distention had lasted a month, and no remedies had succeeded.

R. Camphoræ rasæ pulver. gr. vij.  
Ext. gummosi Cinchon. off. gr. viij. M.  
fiat pilulæ duæ. Sumantur omni quartâ horâ die et nocte per dies tres.—Animal diet, and twelve ounces of port wine.

At first the pills produced great heat; on the third day the distention had disappeared. Two pills were continued daily for the next four days, when the strength and appetite were re-established.

The last case was that of a boy, nine years old: the tympanites had lasted a month, with considerable emaciation and debility. He was covered with warm flannel, and ordered to take nutritive broths, barley water, and the following pills:

R. Camphoræ rasæ subtiliter pulv. gr. ij.  
Squillæ maritimæ pulv. gr. 4.  
Ext. G. Cinchonæ offic. gr. iv. M.  
fiat pilula; dentur tales n. 6, sumat unam omni tertia horâ ante nutrimentum.

After taking six pills, the patient made much urine. After three days, the improvement was marked; and three other pills, continued daily for a short period, procured the most gratifying establishment of the health, increasing the appetite and restoring the strength.

II. In consequence of the suggestion of Dr. Tradini, another medicine, having probably somewhat of the same action as camphor, has been recommended by Dr. G. Santoli, of Naples, who has witnessed repeated instances of its efficacy. The prescription was given him in 1812, by an old practitioner, who had inherited it. Three grains of musk, and twelve of gum ammoniac, are made into three pills by means of some soft extract, and the patient is to take one every morning, noon, and night. In 1813 he prescribed it, with immediate benefit, to a lady who was much troubled, at the time of the final cessation of the menses, with a highly tympanitic state of the abdomen, which had resisted all treatment. Two years afterwards he prescribed it with equal success to a countryman, æt. 65, who was prevented by tympanitis from working, and was consequently in great poverty. This treatment was in unison with the Brunonian theory, then in fashion; but, from Dr. Santoli having afterwards adopted Brouissais' doctrines, he gave up his musk, notwithstanding his previous experience of its efficacy, until 1831, when he was consulted by a woman, æt. 35, who for four years (after having had many attacks of intermittent fever,) had suffered from a disease for which she could get no relief. She was extremely emaciated; and the abdomen only was swollen, strongly distended, and very hard. The sclerotica, as well as the whole body, was yellow. The medical men whom she had previously consulted had told her that the liver was the organ diseased, and it appeared from her prescriptions that antiphlogistic and lowering remedies had been exhausted in vain. Dr. Santoli now thought that it was better to trust to his former experience than to the commonly

adopted theory, and prescribed consequently the pills of musk and ammoniacum. In ten days she was much improved; the abdomen was soft, and the colour and functions more natural. On the fortieth day she was perfectly restored to health. The medicine acted as an aperient and sudorific.

*Il Filiatre Sebezio.* Vol. ix. 1835.

*An Enquiry into some Points of the History of Leucorrhœa.*

By Dr. MARC L'ESPINE.

THE statistical facts which form the basis of the present essay were collected in the Venereal Hospital of Paris. The author insists on the necessity of employing the speculum, as the only means of acquiring a correct knowledge of the disease. In several females, who stated that they never had any leucorrhœa, he found a discharge from the os uteri, on employing the speculum. The cases which he has collected of uterine discharge are the most important, and the connexion which he has found to exist between the matters secreted and the condition of the os uteri are worthy of a short analysis. Of 193 cases of uterine discharge which were examined with a speculum, there were twenty-three in which the os uteri was dry, and the vagina was equally free from any matter which could be traced to a uterine origin. In forty cases, there was only a single drop pendent at the os uteri. In the remaining 130, the discharge was more abundant. This discharge is not necessarily stopped during pregnancy. In a large proportion of cases in which the menses were somewhat retarded, the discharge was also found wanting. The fluid is either watery or more or less viscid, and in the latter case of various characters; sometimes transparent, at others opaline, streaked, opaque, white, or yellow. The condition of the cavity of the uterus is necessarily unknown; but its orifice may be either healthy or surrounded by a rosary circle; this circle may be of a deep red colour or bloody, or the redness may be granular without erosion; or, lastly, the circle may be eroded and ulcerated, with a smooth or granulated surface. The fact of all these cases having been assembled in the Venereal Hospital renders it doubtful how far these discharges may be dependent on a syphilitic cause, or originate in simple chronic inflammation. But, as illustrating the connexion between the condition of the parts and that of the discharge, the facts are still of some interest. From a numerical comparison, the author found that the watery and transparent albuminous discharges existed in the majority of cases in which the orifice was healthy, in one half of those where it was surrounded by simple redness, and only in a fourth of the cases in which there was vivid redness or ulceration. The opposite may be said of those discharges which were striated, semitransparent, and opaque. However, the nature of the discharge is not solely dependent on the condition of the orifice, nor does a similar condition always produce a similar discharge; for an ulceration of the cervix, which coincides most frequently with the opaque, coincides occasionally with the aqueous or albuminous discharges, and those which are opaque and striated are sometimes met with when the cervix is perfectly healthy. It is probable that the aqueous and albuminous discharges belong properly to leucorrhœa; whilst the addition of streaks of purulent or opaque white fluid, depends rather on an inflammation which is either simple or syphilitic. So little that is important can be concluded from the author's examination of the vagina and its discharges, that it is scarcely worthy of notice.

*Archives générales de Médecine*, tome x. *Fevrier*, 1836.

*On the Use of Chloride of Soda in Intermittent Fevers.* By Dr. GOUZER,  
First Physician of the Military Hospital at Anvers.

DR. GOUZER was induced to try this medicine, first recommended by Dr. Lalesque, as its cheapness would render it (if efficacious) very valuable to the poor inhabitants of marshy districts, as a substitute for quinine. The dose prescribed was half a drachm of chloride of soda in four ounces of distilled water, to be taken by spoonfuls between the fits, and so that the last doses should be swallowed shortly before the next paroxysm was expected. The patients were restricted to a light



diet, and confined to their beds, or at least their chambers. Ten cases are reported of ague: in two the intermittent yielded immediately; two others were cured after a slight return; in one there were four attacks, gradually diminishing; in two cases the severity of the paroxysms abated, but it was thought necessary to have recourse to sulphate of quinine; in two others no effect was produced, and in one the disease was aggravated. Dr. G. thinks that these cases prove the febrifuge properties of the chloride of soda to be less marked than those of sulphate of quinine, and therefore that it should not be trusted to except in the alighter cases, and where the patients are readily susceptible of the effects of medicine, as women and children.

*Revue Médicale. Fevrier, 1836.*

*On the External Application of Croton Oil in Affections of the Larynx.*

By Dr. ROMBERG.

THE following cases prove the peculiar efficacy of this species of counter-irritation in affections of the organs of voice; a fact observed by many.

CASE I. A fisherman, æt. 34, lost his voice after exerting himself greatly in saving some individuals from drowning. There was no reason to suspect any disorganization of the larynx. Blisters, vapour baths, &c. were tried without effect. Frictions of croton oil were directed over the larynx, to be repeated as soon as the eruption declined. On the twenty-first day of this treatment he began to recover his voice, and regained it completely.

CASE II. A girl, æt. 18, suffered during seven weeks with hoarseness, succeeded by aphonia, the consequence of a sudden chill. Leeches, emetics, and irritating frictions produced no relief; but, after the third application of croton oil, an eruption appeared, and she immediately regained her voice.

CASE III. A woman, æt. 38, complained for twelve months of a sensation of pressure in the pharynx, as if the neck were squeezed, rendering deglutition difficult: there were no other symptoms. Many remedies were tried without benefit. Three drops of croton oil were rubbed in, and, after the third application, an eruption appeared on the neck, nucha, chest, and face, which was followed by erysipelas. The patient entirely recovered.

Dr. Romberg never found that the external application of croton oil had a purgative effect, but he never applied it to the abdominal integuments.

Dr. Otto reports, in the same journal, the case of a woman affected with sciatica, for which frictions with croton oil were made on the thigh, and the whole body became red and covered with vesicles. Dr. Otto never observed its purgative effect when thus applied.

*Wochenschrift für die gesammte Heilkunde. 1835.*

*Expectoration of Bronchial Polypus, independent of Croup.*

By Professor CASPER.

DR. CHEYNE has described two kinds of bronchial polypus, unconnected with croup; one of which appears to be but a coagulum of blood, and is associated with hæmoptysis; the other symptomatic of a chronic disease, of an inflammatory character, affecting a secreting surface: *this inflammation, however, never reaching to the extent observed in croup.* The following case appears to lead to the conclusion, that inflammation and the formation of a false membrane observed in croup are by no means necessarily connected. In this view of the subject alone is the action of many remedies explicable. Dr. Casper justly maintains that the danger of croup is not simply dependent on the mechanical impediment produced by the false membrane, but that it is to be ascribed likewise to a *specific inflammation*, which, in respect to its symptoms and its resistance to the usual remedies, stands in the same relation to common inflammation as do many forms of abdominal inflammation, &c.

A girl, twelve years of age, of a lymphatic scrofulous constitution, was affected, on the 2d of May, by inflammatory catarrh, which yielded to a few leeches and a mixture containing nitre. She left her bed on the fourth day, and expectorated

occasionally and without difficulty. On the afternoon of May 7th, a violent cough and suffocative paroxysm unexpectedly occurred, and the patient expectorated a whitish-yellow polypous body, which appeared externally very like concrete fat, was of a firm and tenacious character, was with difficulty torn, and corresponded to the ramifications of the bronchi. During the following twelve days, two and twenty similar substances were expectorated. The first ten were accompanied with violent cough and paroxysms of suffocation; the expectoration of the remaining twelve was very easy, long after the patient had left her bed, when she was quite free from fever, had a good appetite, slept well, and had only a slight hoarseness of voice. This hoarseness had existed many years previously, and still continues.

Two of these bodies were generally expectorated daily; one in the morning, and the other towards midnight. The health of the patient being otherwise good, very little medical treatment was employed.

*Wochenschrift für die gesammte Heilkunde. No. 1. 1836.*

*On Incontinence of Urine. By M. MONDIÈRE.*

M. MONDIÈRE has employed the extract of *nux vomica* in cases of nocturnal incontinence of urine, with very beneficial effects. The case in which its efficacy was most strongly shown is that of a young woman, aged twenty, who, from the age of six years, had constantly voided her urine involuntarily during the night. The use of twelve of the following pills put an end to the incontinence: they were continued until twenty-four grains of the extract had been taken, and, during the year following this treatment, there was no return of the disease. Other successful cases are mentioned.

*Extracti nucis vomicæ, gr. viij.*

*Ferri protoxidi, gr. j. M. fiant pil. xxiv.*

*Gazette Médicale. No. 10. 1836.*

*Formula for an artificial Chalybeate Water.*

*R. Ferri Sulphatis, 3ss.*

*Sacchar. albi, 3iss. Misco, et divide in chart. xij. æq.*

*D.S. No. 1.*

*R. Sodæ Carbonatis, 3ss.*

*Sacchar. albi, 3iss. M. et divide in pulv. xij. æq.*

*D.S. No. 2.*

One powder from each of these packets is to be dissolved in a small quantity of water, then mixed and drunk whilst effervescing. Each draught contains about a grain of the carbonate of the protoxide of iron, dissolved in water impregnated with carbonic acid gas, with a little Glauber's salt and carbonate of soda; the carbonate of soda being designedly a little in excess. This is a good substitute for ferruginous mineral waters, where the natural ones cannot be obtained.

*Summarium des Neuesten in der Heilkunde. 1835.*

*Cinnabar Fumigations.*

DR. VENOT employs with success the following mode of fumigating venereal ulcers of the throat with cinnabar. After soaking sage-leaves in strong gum-water, the sulphuret of mercury is sprinkled over them, and they are dried in the sun; they are afterwards smoked in a pipe instead of tobacco, and the vapour is thus directly and conveniently applied to the diseased surface. Several cases are reported, to prove its efficacy.

*Journ. de Méd. Pratique de la Soc. Roy. de Bourdeaux. Février, 1836.*

## SURGERY.

*On the Diseases of the Lymphatic System.* By A. VÉLPEAU, Professor of the Faculty of Medicine; Surgeon at La Charité.

I. *On Inflammation of the Lymphatic Vessels.*

WHEN in contact with diseased products, lymphatic vessels may imbibe matters capable of exciting inflammation in themselves. In one class of cases, these vessels are in contact with morbid parts or deposits which are protected from, and in another with those which are exposed to, the influence of the external air. In an ulcer, for instance, all the products of inflammation undergo various and rapid modifications, and these are in some cases rendered actually poisonous. The absence of such a condition, as in disease protected from the air, must diminish the activity of the exciting cause, and render inflammation from the absorbed matter much less probable. Inflammation of the lymphatics (*angioleucitis*) is, therefore, much more rare where there is not external solution of continuity than when this exists.

Among the causes, independent of the influence of the external air, which may give rise to angioleucitis, may be mentioned all forms of inflammation of parenchyma, glands, cellular tissue; pus and other fluids, however deposited; tubercular, cancerous, and the majority of morbid productions or degenerations. Whenever there is exposure to the atmosphere, its influence is superadded; as in the majority of cutaneous diseases, fistulous openings, and in solutions of continuity of mucous membranes. These causes must be considered as only predisposing in the majority of instances, or as requiring some other condition before they become excitants. The old and the young are more subject to their influence than the adult and those at the middle period of life; the constitution in which cellular tissue abounds, than the robust and the fibrous; the debilitated from any cause, than the healthy and strong.

The symptoms are local or general; the local symptoms are superficial or deep.

*Local symptoms.* When the subcutaneous vessels are affected, the cause may almost always be found in a solution of continuity, inflammation or suppuration of the integuments. Lines of various breadth, following the course of the lymphatics, tortuous, irregular, and interlaced, or patches of red, rosy, or violet colour, soon appear in the region of the irritant cause, or at some distance above. Inflammatory patches next follow, and eventually spread over the unchanged integument, until a true erysipelas is formed. Similar changes occur at a greater distance from their cause, giving the appearance of an erysipelatous inflammation united by red lines and stripes. A sharp and burning pain, much increased by touch, attends the redness. Swelling is at first but slight, and sometimes not observable even in the vessels themselves, which remain supple; but, in general, subcutaneous swelling very soon follows the appearance of redness, commonly extending irregularly both in depth and surface, and being ordinarily nodulated, but sometimes more extended. The skin, cellular tissue beneath, and neighbouring parts, appear to share in the swelling; but the inflammation attaches itself more to the vessels, the plexuses, and the lymphatic glands, than to the cellular tissue generally. The parts soon become more tense, but still an œdematous or spongy character indicates a state of infiltration, and establishes a marked distinction between the regular elasticity of phlegmon or the less resilience of erysipelas. Heat, at first considerable, does not increase in proportion to the other symptoms. Enlargement of the glands in the course of the lymphatic vessels is not always present.

When the deep series of lymphatics is first affected, pain is the earliest symptom, deep, lancinating, and fixed, extending with or soon following the inflammation, and most severe in those parts where the inflammation is most developed. A nodulated and deeply-seated swelling appears about the same period and in the same situation as the pain. Redness follows: it is less superficial and more diffuse

than in the former variety. The skin is tense and shining; rather of a pale rose colour than red in the intervals of the inflamed nodules. It is the deep lymphatic glands which swell and become painful. Infiltration is more rapid and extensive, and may give rise to the idea of an inflammatory œdema; but, in general, both series of lymphatics are simultaneously or reciprocally affected, when the symptoms are mixed.

*General symptoms.* These are little modified by the series of lymphatics which happens to be affected. Slight horripilations or distinct rigors, followed by heat, dryness, and redness of skin, precede the inflammation. The pulse, always frequent, is sometimes full and strong; at others small and frequent, as in infectious fevers. Thirst, præcordial anxiety, nausea or vomiting, sleeplessness, rarely with delirium, constitute other symptoms, which, together or in part, may for two or three days precede the local symptoms. The secretions are not always disturbed. Fever increases as the angioleucitis is developed. The tongue, with a grey or yellowish coating, is smooth and red at its tip and edges: it rarely becomes dry, until an advanced period; at times it is universally rough, without always losing its grey or reddish colour. It afterwards becomes incrustated and chapped; the gums and mouth are covered with sordes; and reaction, more like ataxic than adynamic fever, terminates life.

*Terminations and Prognosis.* When the inflammation is of limited extent, and does not pass to the deep series of vessels, and when the affection that produced it improves, either spontaneously or on the use of remedies, resolution may be calculated on; otherwise, suppuration is almost inevitable. When there are numerous red patches which coalesce, and beneath, nodules of a certain thickness, suppuration, although slow, may be expected. Induration, without suppuration, is of rare occurrence, and belongs almost exclusively to the chronic form of the disease. Death may occur during the inflammatory or suppurative stage; it is to be feared, when violent general symptoms, coinciding with extensive inflammation, continue more than eight or ten days; when the extent and depth of the inflammation in an old or unhealthy subject promise abundant suppuration; when there are numerous and repeated purulent deposits; when these are formed in the viscera or serous cavities, and when the blood is altered by the matters absorbed. In some cases the symptoms are regularly progressive; in others they appear to belong to a succession of inflammatory attacks. Resolution may happen between the fourth and the tenth day; death, generally, between the eighth and the twentieth. After the thirtieth or fortieth days, induration may take place, but internal deposits, diarrhoea, and an infected state of the blood are most to be feared.

*Treatment.* Any sore that may exist should be covered with a poultice. If much arterial action be present, a large bleeding, followed by a warm bath, of an hour, should be employed. If there be redness and swelling around the sore, twenty or thirty leeches should be applied, and afterwards a roller, constantly moistened with cold water. If these means are useless, let two drachms of mercurial ointment be rubbed over and beyond the painful parts, three times during the twenty-four hours; the skin being afterwards cleaned with oil, and the bath repeated. The earliest formation of pus must be liberated by a free incision; the part to be treated by poultices or compression. If resolution do not happen, and suppuration is slow to develop itself, large blisters should be applied to all the parts inflamed: they promote either maturation or resolution, better than any other means. Purgatives should be employed, if diarrhoea or symptoms of affection of serous membranes be absent. Suppuration having ceased, but an indurated or infiltrated condition remaining, ioduretted ointment should be used, or the mercurial ointment, if the infiltration be extensive, aided by compression and baths. Diet must be strictly attended to.

*Differential diagnosis.* Angioleucitis has been confounded with phlebitis, neuritis or neuralgia, erysipelas, phlegmon, &c. [Of these, it will only be necessary to notice the author's remarks on the distinctive characters of phlebitis; a very careless observer alone would confound with inflammation of lymphatics, the other affections.]

Phlebitis is commonly announced by local symptoms, instead of by general

reaction. It appears with larger, fewer, deeper and less interlaced stripes, which correspond to hard, rounded, moveable, and painful chords. When there are external patches of red, they are situated over more extensive nodules, which are less deep and hard. The patches rarely coalesce, so as to form true erysipelas. Suppuration is more rapid, and the abscesses are diffuse. These are few, and generally in the course of the large veins. Swelling is less in extent and degree; the skin is neither tense nor shining, but rather thickened and simply inflamed. *The lymphatic glands are neither swelled nor painful.* Pain is less acute, and general symptoms more adynamic than inflammatory; rarely existing until pus has formed and entered the circulation. Their development is very rapid; rigors are long, violent, and irregular; the pulse very small and unequal; the tongue becomes slimy, generally red, then blackening, before it grows dry and incrustated. There is less anxiety, agitation, heat, and thirst. Delirium and sweatings, followed by an expression of stupor, occur sooner. There is generally either diarrhoea or constipation. Inflammation may extend from the veins to the absorbents and inversely, when the symptoms are mixed.

It is well to remember that phlegmonous erysipelas may be associated with angioleucitis.

*Morbid Anatomy.* Such of the lymphatics as can be examined are thickened; internally of a milky whiteness and somewhat tomentose, but still permeable; the surrounding cellular tissue is easily broken, and infiltrated with turbid demi-concrete lymph. Where the vessels are interlaced, and opposite the valves, the disease is more developed. Pus is here generally found in the cellular tissue; the vessels are often obliterated, and lardaceous nodules constitute the commencement of abscesses. The skin, often covered with phlyctenæ, is scarred or mortified in patches, which resemble the sloughs of anthrax, and appear rather in a state of suppuration than of gangrene. Beneath the integument, the cellular tissue is in some places healthy; in others, hardened or lardaceous, at times, infiltrated with pus and turbid serum, and ulcerated at the situation of purulent deposits. The fasciæ, nerves, and muscles are but little changed. The interstitial cellular tissue is the chief seat of disease; it is everywhere infiltrated, hardened, or thickened, as beneath the skin; pus is generally situated in circumscribed abscesses. Mortification is very rare beneath fasciæ. The veins and arteries appear hardened and enlarged, owing to the infiltration of their cellular coats, from the numerous lymphatics existing in their vicinity. If the disease has lasted long, the blood is always very fluid, serous, of a reddish colour rather than black. The few coagula in the veins are diffuent, and often contain yellowish grains; and those which are formed in the arterial system are more friable than after death from purely inflammatory diseases, and are besides less homogeneous, containing lumps frequently of a yellowish, black, blue, or red colour. Pus has never been found in the heart or large vessels. The parenchymatous organs are rarely the seats of abscess by metastasis. Those which are found in the liver and lungs are more remarkable for their number than their size. Concrete masses are often found when angioleucitis has arisen from a cancerous affection. In many subjects, sero-purulent effusions into the pleuræ, peritoneum, and articulations, and partial inflammation of the viscera are observed. The brain and alimentary canal, mucous follicles and glands of Peyer, are unaffected. If there be ulceration, it is generally towards the end of the large intestines, and particularly in the rectum, unless the disease have commenced there. The appreciable internal morbid changes are far from being always in relation with the symptoms observed during life. The same remark is, in a less degree, applicable to the local changes; where the traces of inflammatory action may be trifling, although the symptoms of angioleucitis have been intense.

## II. On Inflammation of the Lymphatic Glands.

THE Causes of Inflammation of the Lymphatic Glands, (*Adénite lymphatique*), are (1.) *direct causes*, as external violence of every kind; and (2.) *indirect causes*. The inflammation may be transmitted in three ways: 1. By contiguity of these tissues; as when inflammation attacks primarily the neighbouring cellular tissue, and passes to the glands. 2. By the lymphatic vessels becoming primarily

inflamed, and the glands secondarily. 3. By the transmission of irritating matter from a distant source. This is by far the most common cause.

It is unnecessary here to discuss the question whether the lymphatics absorb, for the fact is sufficient for the present purpose, that a morbid principle in a distant part may produce inflammation of a lymphatic gland without affecting in any appreciable way the intermediate tissues; as buboes, enlarged axillary glands, &c. demonstrate daily. All inflammations, therefore, as they all in some way modify the fluids, may produce this disease. The altered fluids are gradually taken into the circulation, and especially affect the lymphatic glands, either from the elaboration which these fluids undergo increasing their irritating qualities, or from their contact being prolonged by the delay in their progress. Thus a scratch, the smallest pustule, a burn, a chap, an excoriation, an ulcer, any inflammatory disease of the skin or cellular tissue, or of the tissues surrounding the arteries, veins, nerves, or muscles; luxations, fractures, blisters, moxas, setons, cupping; small-pox and chicken-pox, measles, scarlatina; indeed all operations which in any way divide, bruise, or injure the tissues, are causes of inflammation of the lymphatic glands. This inflammation may remain after the cause is removed, and may be set up without any trace of inflammation of the connecting lymphatic vessels. On these accounts the connexion between the original inflammation and the glandular tumours in many subjects is not discovered: other difficulties may arise from the trifling nature of the primary cause, or from its being deeply seated: it may be latent and obscure, so that the inflamed gland is the first appreciable symptom: it thus is sometimes a prelude to erysipelas, and thus it appears after great fatigue, chills, &c. Most frequently, indeed, the practitioner never thinks of connecting the enlargement of the gland with any such previous cause, and M. Velpeau takes much credit to himself for having insisted, many years ago, on the importance of this connexion so universally overlooked.

The diseases which most frequently produce this secondary inflammation of the lymphatic glands are those of the skin, mucous membranes, subcutaneous, subserous, and intermuscular cellular membrane, and of that surrounding the vessels: more indirectly diseases of the joints, bones, viscera, muscles, &c. may cause it, as well as certain foods, drinks, regimen, occupation, habits, &c. which modify in any injurious way the white fluids. Are not scrofulous tumours developed in the same way? In children, young people, and women, particularly the fair and delicate, the fluids and white tissues so predominate, or are so organized that the least cause produces changes which become speedily the source of indurations, infiltrations, inflammation of the lymphatic glands, and of other parts of the same system. During twenty years, M. Velpeau has examined 900 scrofulous persons in order to elucidate the question proposed above: in 730 either inflammation or suppuration of the skin or cellular tissue had preceded the lymphatic tumour; the disease in ninety-five others was of so long standing, that no positive information could be obtained; the remaining ninety-five were children so poor, and so neglected by their parents, that the existence of one of these causes, although not admitted, might reasonably be supposed.

If it was possible to establish the fact that the strumous swelling of the lymphatic glands is almost constantly secondary, that it is at first the symptom only of a pathological action situated elsewhere, or the proof that the white fluids are unusually irritating, considerable progress would be made in the etiology of scrofula. It would then no longer be necessary to suppose a particular vice or fault of the constitution, an hereditary principle in the economy, as scrofulous diseases would arise from certain states of the organization easily comprehended.

Infancy is most exposed to these diseases, as the skin and mucous membranes are most frequently diseased. Among children, those whose tissues are pale and gorged with fluids are most liable to be affected, because their integuments are more susceptible of impressions, and their fluids more easily modified. The effects of poverty, bad food, want of clothing, moist cold, &c. in exciting scrofulous enlargements of the glands, are in the same way explained. Dentition, ulceration of the ears, affections of the scalp, coryza, explain the frequency of strumous tumours about the neck and jaw. Catarrhs, hooping cough, measles, scarlatina, frequent

attacks of bronchitis, to all of which the young are subject, account for those in the chest; and affections of the intestines explain diseases of the mesenteric glands. The common infiltration of the nose and upper lip may be either the cause or the effect:—the cause, as such lesions produce enlargement of the neighbouring glands; the effect, as when these glands are diseased they at once delay the progress of the lymph from those parts from which they derive their vessels. On this hypothesis predisposing causes are not rejected, but the determining or occasional causes are explained.

Inflammation of the lymphatic glands may be acute or chronic.

1. *Acute.* The gland swells, becomes hard and painful, being often preceded by chills and febrile symptoms, the inflammation then extends to the surrounding cellular membrane. After six days to a fortnight, suppuration takes place in several circumscribed points; and, when opened, the quantity of pus is rarely in relation to the size of the tumour, being either much less or the contrary. The first is the case when the collection of pus is between the gland and the skin, the second when suppuration is established between the glands, or between them and the deeper-seated parts. The swelling never disappears suddenly after the pus is evacuated, but very slowly: the surrounding cellular tissue being first restored, and the gland secondarily.

*Terminations.* 1. *Resolution* is much more common than is admitted. It may be expected if the primary disease is abated or removed before the inflammation passes to the surrounding cellular tissues; or, in the greater number of cases, if the inflammation is confined to the gland itself. It rarely takes place if the cellular tissue becomes inflamed; and if, besides this, the skin is red, and the subjacent layers much gorged, resolution should not be expected. 2. *Suppuration* takes place in two ways. When the gland itself suppurates, it becomes infiltrated with pus, and not a true abscess: ordinarily, the surrounding cellular tissue suppurates, and the abscess differs from phlegmon only in the irregularity produced by the presence of the enlarged glands; sometimes both suppurate. Suppuration may be expected when the enlarged gland depends on a suppurating wound, or when the inflammation extends beyond the gland. 3. In the chronic stage the swelling diminishes, but a little pain and heat, with some increase of size, remain. If these glands are examined in the dead body they are found of a dirty reddish yellow, homogeneous, and hard; sometimes containing a little concrete or half-liquid pus.

*Treatment.* In the first instance, a large bleeding, if indicated by the pulse; twenty to forty leeches, or cupping two or three times in two days; poultices or emollient compresses; baths; mercurial frictions, and blisters after depletion. Syphilitic buboes, if suppuration has not taken place, are resolved most rapidly by blisters only. When suppuration has taken place, these means are useless, and poultices should be applied: at this stage it is an important question to solve whether the abscess should be opened, and what are the best means of opening it. M. Velpeau considers that the abscess should certainly be opened; for, if it is not, the pus burrows, and a large portion of skin becomes disorganized. As a general rule, the knife should be employed at an early period; if the skin is thin, livid, and denuded, either potass or the actual cautery have this advantage, that they destroy the skin at once, and leave a wound which speedily heals; but, in all other cases, the bistoury is preferable; and, even in these, it can be used to remove the loose skin. The opening should be made as soon as fluctuation is felt; for, by waiting until the abscesses are matured, the same inconveniences are experienced as result from leaving the opening to nature. Long and numerous incisions are more advisable than small and few punctures: if many points of the tumour appear softened, as if from distinct collections, M. Velpeau makes an incision through the whole length of each; when there is but one collection, one incision is to be made reaching beyond the inferior limits of the abscess, bearing in mind, that in all cases an opening should be made so large that the pus cannot stagnate.

[It must be recollected that M. Velpeau is a hospital surgeon, and that these directions for opening suppurated glands are not entirely calculated for private practice, where the "*jucunde*" is of as much importance as the "*cito*." Long and numerous incisions in the necks of children or young ladies would be as injurious to

the credit of the surgeon as to the appearance of his patients; and it is a fortunate circumstance that small punctures, if they are made when suppuration is first discovered, and care is taken to press out as much matter as possible, will generally succeed. Sir Astley Cooper, whose authority on these subjects cannot be disputed, opens such abscesses on the neck with a cataract knife, making the wound transversely so as to be hidden by the creases of the neck.]

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*On Vesico-Vaginal Fistul , and on a new Method of Treating them.*

By M. JOBERT.

THESE fistul  are both congenital and accidental; the former, very much more infrequent than the latter, and arising from a want of development of the parts intervening between the bladder and vagina. The accidental vesico-vaginal fistul  vary in their seat, their form, and the causes which give rise to them. These causes may act either from within the bladder upon the vagina, or inversely, or may originate within the uterus; and, lastly, these fistul  are sometimes owing to the use of certain instruments. In the first class of causes may be mentioned, pins which penetrate from the bladder into the vagina, and calculi which destroy the partition between them. To the second belong pessaries, cancer, syphilitic ulcers. To the third, (and this is by far the most frequent,) the descent of the head of the child, and the consequent pressure upon the vesico-vaginal partition. Among the causes of the fourth class may be arranged the use of dilaters; the perforator; bruised pieces of bone; instruments applied to the vesico-vaginal septum, in order to remove calculi, &c. Of the efficacy of all these causes in producing fistul  between the bladder and vagina there are proofs recorded by various authors.

*Pathological Anatomy.* Whether the fistul  occupy the neck of the bladder, or are in the neighbourhood of the cervix uteri, or, as is most commonly the case, they are situated between these two points, they may be limited to the partition; but they often extend right and left, and then the vagina is consequently destroyed in a greater extent than the bladder. It may be stated, as a general rule, but not without exception, that the bladder is in these cases less open than the vagina. In the first stage there is an eschar. After an uncertain interval, by the separation of this eschar, an aperture is formed, through which the urine passes. Lined by an accidental membrane, which is continuous with that of the bladder and vagina, these fistul  undergo changes in proportion to the length of their existence. They become dense and resistant, and establish a true continuity between the bladder and vagina. The filamentous cellular tissue which exists between the vagina and bladder becomes intimately united with them in consequence of inflammation. The blood-vessels are obliterated to the extent of a line around the cicatrix, and in the same point; the cellular, muscular, and mucous tissues of the bladder, are confounded and become dense and closely connected. The vagina, at the cicatrized part, is hard. The mucous membrane is thickened and rough: indurations take place in its parietes. When the fistula approaches the cervix uteri, the inflammation extends to the peritoneum; it gives rise to the formation of false membranes and consequent adhesions, which prevent the infiltration of the urine. The bladder, no longer a reservoir of urine, which escapes as soon as it enters this organ, contracts; and the urethra, its function being stopped, is diminished, and eventually its caliber obliterated.

*Symptoms.* The ordinary characters of urinary fistul  are found to exist. They are round, transverse or longitudinal. The first are sufficiently common; the second are more frequent, the last are the rarest of all. The extent of these fistul  is very variable: in some instances being only a few lines in length; in others occupying the whole partition. When the connexion between the vagina and bladder has been made by a cutting instrument, the urine immediately escapes by the former; not so, however, when the fistula is the result of a tedious labour. The partition loses its vitality, the parts swell, inflame, and there is consequent retention of urine, requiring the use of the catheter. The eschar must separate before the urine escapes. The time occupied by the separation of the eschar is variable; after



two days in some, in others not until eight or ten days have elapsed. When the fistula is large, the urine escapes as soon as it is received into the bladder; but, on the contrary, when small, or when occupying the neck of the bladder, the urine escapes partially, and the patient is aware of its passage through the vagina. The position of the patient influences the flow of the urine. In some cases it ceases in the upright, in others in the horizontal posture. When the fistula occupies the neck of the bladder, the urine may be retained a considerable period, but never beyond two hours, and in this case the horizontal position is the least favorable to its escape. The relation also which is borne to the borders of the fistula by contiguous viscera modifies the passage of the urine; thus, the pressure of the uterus and of the small intestine tends to obliterate the aperture by the approximation of its sides. Walking, voiding the feces, cough, menstruation, are all conditions, which facilitate and increase the course of the urine by the vagina. The contact of the urine with the interior of the vagina and thighs is a cause of great inconvenience, and sometimes of worse effects. It is doubtless an occasional cause of cancer of the generative organs; it produces ulcers of the vagina and thighs, and a constant state of turgidity of these parts, with erysipelas and eruptions of various characters. The common effect of it is to render the individual so disgusted with herself that she lives entirely alone. Calcareous concretions may accompany vesico-vaginal fistulae, deposited by the urine, and they produce great pain and ulcerations of various extent. Some patients are the subjects of obstinate constipation; possibly owing to a contracted state of the fibres of the rectum, in consequence of the incipient escape of the urine by the vagina. These fistulae may be accompanied by indurations, by circular contraction of the vagina, by bands across the vagina, by destruction of the anterior and posterior parietes of the vagina. It is said, that the urine may be poured into a species of sack, formed between the laminae of the vesico-vaginal partition; but this, of which there is only one case on record, must be necessarily very rare.

*Diagnosis.* When the fistula is formed, this is sufficiently easy; but it is less easy to say with certainty whether or no it will occur. It is difficult to ascertain whether gangrene has happened during laborious delivery; if ischuria should follow, it cannot be until after the separation of the eschar that it can be known to depend on the formation of fistula. Now, the time for the separation of the eschar is very variable; sometimes not until the tenth or twelfth day after delivery, and a case is mentioned in which a month elapsed before the urine made its escape by the vagina. Occasionally, after labour the neck of the bladder does not quickly recover its contractile energy. Some women, indeed, throughout life, can with difficulty retain their urine, which escapes by drops when they lie down. This urine, passing into the vagina, and again escaping, presents exactly the same appearance as a fistula. The introduction of a catheter will immediately decide the point, if it be not settled by the return of the parts to their normal functions. To distinguish a communication between the vagina and bladder, pass the finger along the anterior paries of the former, and any loss of substance will thus be recognised; a coloured injection may then be forced through a catheter into the bladder, and, the finger being within the vagina, will feel the escape of the fluid by the aperture. A sound introduced into the bladder may be felt through the fistulous opening, by passing the finger into the vagina, or a sound may be passed into the bladder through the fistula in the vagina. The speculum is a valuable instrument by which to ascertain the form, situation, and extent of the fistulous structure; and, by its means, fistulae may be detected which might escape other means of investigation.

*Treatment.* The transverse fistulae are in general considered as the most difficult to cure. The indications of treatment are different, according to the object which is aimed at; whether it be the complications of the disease, or whether palliative means only are employed, or an attempt is made at a radical cure.

*Treatment of Complications.* It is necessary to moderate the inflammation of the bladder and vagina by appropriate means; by baths, enemata, emollient cataplasms, copious demulcent drinks. The gravelly incrustations which sometimes take place in the vagina must be removed by frequent injections or other means, and proper medicines be employed, as much as possible, to prevent their formation,

as they would much interfere with the success of an operation. Every effort must be made to produce a favorable condition of the general health, previous to any operation being performed.

*Curative Treatment.* To effect a radical cure, two principal methods have been followed; one by mediate or secondary reunion; the other by immediate reunion. Several procedures have been recommended, in order to effect the immediate or secondary reunion: 1, cauterization; 2, the method of Desault; 3, that of Jules Cloquet. The means employed to produce immediate union are—1, suture; 2, the approximation of the borders of the fistula by uniting instruments; 3, the method of the present author, and which is an application of élytroplasty. We pass over the description of the various means which have been employed with such various degrees of success, to the method of M. Jobert, to which he was led by a careful examination of the previous methods of treatment by surgeons, a conviction of their manifold imperfections, and the serious inconveniences which are connected with them. The object of M. Jobert is to cut a flap, to supply the lost substance; to keep it in its place, and to reestablish the proper current of urine. It is necessary, 1, to renew the borders of the fistula; 2, to cut a flap; 3, to employ a suture; 4, to reestablish the course of the urine. By careful traction, the vesico-vaginal septum may be drawn out, and the borders of the fistula be there incised. This may sometimes be effected by a finger introduced into the fistula. M. Jobert commonly employs the hooks of Museux, by which he seizes either border of the fistula, and pares it, beginning with the posterior, and finishing with that which is nearer to the urethra. For this, a probe-pointed bistoury, or the scissors employed by M. Roux in palate-suture, may be used. The whole border of the fistula must be carefully pared. One of the valves of the author's speculum is advantageous to guide the hooks to the lips of the fistula. The flap may be taken from the external labia, from the adjoining parts, or from both. Its size must be proportioned to that of the fistula. It is better that it should be somewhat larger, (but not much,) as it then possesses more vitality, and is less likely to mortify. The hairs must be first shaved, and the flap, when cut, so twisted on itself that the bleeding surfaces may be brought in contact. The pedicle should be of considerable size, and attached to the point which is nearest to the vagina. It should be of sufficient length, not at all to pull the vagina, and to allow freedom to its circulation. It must not consist solely of skin; in this case, gangrene easily occurs; but some of the subjacent tissues must be removed at the same time. The operation must be delayed if the health is not good, or until any ulcerations of the vagina have been cured. Should there be any bands crossing the vagina, they must be divided.

In order to cut the flap, the integuments of the labium being stretched with one hand, an incision must be made on its external side, from above downwards; and, when this has been carried to a sufficient extent, the knife being turned, must be carried to the internal surface of the labium, on a level with the commencement of the incision. The flap has then a rounded extremity, and is fitted for large fistulae. The flap may be made by two incisions instead of one; each one commencing above, and uniting beneath, at a more or less acute angle. This is more appropriate to smaller fistulae. Then dissect the skin, and with it some of the subjacent tissues, from without inwards, and from the extremity towards the pedicle of the flap. Any arteries which bleed on the surface of the wound should be tied. In women whose vitality is very active the flap contracts into numerous folds. The pedicle should be somewhat larger than the flap itself; for it is essential for its union with the borders of the fistula that its circulation should be free. As the flap is disposed to contract during its suppuration, M. Jobert prefers to take it not only from the labium, but from the neighbouring parts, by extending his incisions. Where the woman is fat, it is better to make the flap entirely from the larger labium; for the object should be to obtain a flap consisting of skin and the subjacent vascular tissue, rather than of much adipose tissue. In order to introduce the flap into the fistula, M. Jobert doubles it up, and traverses its extremity by a waxed thread. He then introduces a catheter into the bladder, through the urethra, and directs its point into the vagina through the fistula. He then passes the two ends of the thread through the eyes of the catheter. Withdrawing this, he next disen-

gages the thread from the instrument; and then, by pressing with one hand upon the flap, and by drawing the thread with the other, he brings it to the fistula.

The next step in the operation is the suture. The finger being introduced along the flap, a curved needle mounted on the needle-bearer employed in *palate-suture*, is then passed above it, or the needle may be directed by the hand alone. By one effort the needle is passed through the flap and the borders of the fistula, and is withdrawn with its thread by means of a pair of dressing forceps. The same suture is then made at the opposite angle of the fistula. It is of the greatest importance that the flap and the angles of the fistula should be both comprised in one noose of thread. The threads being passed, must be tied, and allowed to project externally. They separate in about fourteen days, but sometimes later. The urethral thread, which is attached to the summit of the flap, must be fixed in such a manner as to bear nothing during the movements of the patient. M. Jobert attaches it by diachylon plaster to one of the thighs.

A catheter must now be introduced into the bladder. If, in so doing, it come in contact with the flap, it must be turned on one side. A second catheter must be added to the first, to carry off the urine from the wounds which have been made. The catheter must be always open, and supported by cotton threads, attached to a bandage passing round the body. Constant repose in the horizontal position must be enjoined, in order that the bladder may not be irritated with the catheter; and that it may be retained as long as possible. The pedicle of the flap must remain undivided for a considerable period. M. Jobert divides it, between the thirtieth and fortieth day; but, in determining on the proper time, due regard must always be paid to the constitution and degree of vitality of the individual. The necessity of this delay is explained by the density of the tissues about the fistula.

As soon as the operation is terminated, some blood escapes into the bladder, and passes through the catheter: the same takes place in the vagina. The raw surface of the flap becomes covered with a layer of lymph; the urine is turbid, because of the pus which is secreted by its summit. This state of the urine varies as to its duration; enduring sometimes twenty-five days. More or less blood flows on the section of the pedicle, and one portion of it retracts towards the vagina, the other towards its root. It is liable to become inflamed from the contact of urine with its exposed surface; it swells, becomes red, and extends beyond the entrance of the vagina. Suppuration takes place, but, as this ceases, the inflamed portion retires gradually towards the vesico-vaginal septum. The flap entirely loses its sensibility: but the skin retains its structure, and hair grows upon it as before.

The experience which M. Jobert has hitherto had of the beneficial results of this operation, is founded on three cases; in two of which the operation succeeded; in the third, death took place in consequence of phlebitis; but, in the examination of the body, the union between the flap and the fistula was found to have established itself.

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#### *On the Cure of Erectile Tumours.* By Professor LALLEMAND, of Montpellier.

M. LALLEMAND was led, by observing the rapid cicatrization of an incision made in an erectile tumour during the partial removal of the lower jaw, and by reflecting on the complete obliteration by inflammation of portions of the corpus cavernosum and spongiosum, (to which erectile tumours are precisely analogous,) to attempt the cure of an erectile tumour, which from its situation could not be removed, by incisions and immediate union of the edges of the wounds. This tumour occupied the upper lip and extended into the nares; the first step consisted in removing, with two strokes of the scissors, a portion from the centre, of eight or ten lines in breadth: the wound bled freely, but the bleeding was immediately stopped by bringing the edges of the wound together, and fixing them with needles, around which thread was twisted as in the hair-lip operation. The wound healed favorably: the needles were removed on the fourth and fifth day, and the thread was detached on the twenty-fifth, leaving a solid cicatrix.

In about two months afterwards, M. Lallemand removed another portion in a

similar way. As a proof of the success of the first cicatrix in partially obliterating the erectile tissue, it was observed that the blood merely oozed from the incision nearest to the first cicatrix, whilst it gushed freely from the opposite side; and the needles were passed with difficulty into the erectile tissue near the old cicatrix. The needles this time produced more abundant suppuration, but the wound healed, and its cicatrix, as well as those produced by the needles, looked like fibrous tissue. As the division of the nares, as well as the adjoining mucous membrane, remained tumefied, and as the needles produced a similar obliteration of the erectile tissue as the incision, M. Lallemand introduced them alone; and they produced the change he expected.

In a third case where incision was also employed, the effect of the needles in transforming the erectile into fibrous tissue was still more apparent, so that he employed in the next case needles alone.

An erectile tumour of three inches in length, two in breadth, and three lines in thickness, situated over the left scapula of a child of three months old, had been subjected to compression without advantage, and had doubled its size since birth. As the child was irritable, and very delicate, and the tumour was large, M. Lallemand was afraid to treat it by incision: he therefore introduced into the lower part of the tumour twelve fine pins, and covered the space which separated them with numerous circumvolutions of waxed thread. The child cried but little. Three days afterwards he made a similar application to the upper part, and attacked successively the whole circumference, leaving the pins for about seven or eight days, or even more, until they had produced sufficient inflammation. This occupied about forty days, and he was about to attack the centre, when he found it violet, tumid, and very hot; the general health was disturbed, and he suspended all treatment. To his surprise, the central part suppurated and collapsed, and in a fortnight was completely changed into a flat cicatrix. As some points of the circumference had escaped inflammation, it was necessary to repeat the introduction of the pins. After two months and a half of treatment, during which time 120 pins were introduced, the whole was converted into a pale fibrous tissue: not a teaspoonful of blood was lost, and the health of a delicate child was only slightly deranged for a few days.

Compression cures in a similar way, by producing inflammation: when compression is impossible or useless, this plan should be tried: it should also supersede the removal of the tumour, even when such an operation might be performed without danger or deformity. The stationary condition of such tumours does not warrant their not being operated on. The kind of operation must depend on the seat and extent of the disease. Where, as in the first case, the tumour arose from the alveolar border of the lower jaw, nothing better could be done than a removal of a portion of the bone, leaving undivided its lower border to prevent deformity, &c. Where the disease is very extensive, and occupies prominent and moveable parts like the lips, as it did in the second case, excisions and needles should be employed; but, where the erectile tissue is not free and moveable, the cure is best performed by exciting acute inflammation in it. Pins of a medium size are better than needles, as they can be cut with scissors, or their ends covered with forceps: the waxed thread is useless. Nitrate of silver, and probably nitrate of mercury frequently applied, keeps up the inflammation, which is the essential agent.

[Although our countryman, Dr. Marshall Hall, is fully entitled to the credit of priority in treating erectile tumours according to the principle advocated by M. Lallemand, (See *Medical Gazette*, Vol. VIII. 679,) it does not appear that the French Surgeon was acquainted with the practice recommended by Dr. Hall. At any rate the clear way in which he explains the steps by which he was led to substitute the insertion of needles for extirpation, renders his paper both valuable and instructive. Considerable credit is due to Mr. Abernethy for having recommended the simpler treatment by wet compresses and pressure, at the time when complete extirpation with the knife was practised generally. It is curious that he considered the increase of these tumours depended on inflammation, and that they were to be cured by subduing it.]

*Archives G n rales de M decine, Mai, 1835.*

*On certain Modifications in the Treatment of Hernia. By M. GERDY.*

Professor Gerdy recommends the following plan of applying the taxis when the hernial tumour is so large that it cannot be grasped and pressed in its whole circumference; for in such cases the partial pressure does not become concentrated at the hernial opening, but pushes the whole mass in front of the ring.

He seizes between the extremities of the fingers of each hand that portion of the tumour nearest to the ring, at about an inch from the orifice, and, pressing the fingers together, he isolates this small portion from the rest of the tumour; he compresses it in its whole circumference, and by lateral movements he endeavours to return it. It generally requires only slight efforts to succeed, and the tumour is a little diminished; he then leaves the fingers of one hand applied to the ring, to prevent the reduced intestines from again protruding, and with the other hand seizes another portion in the same manner, and, abandoning the opening, he performs the same manipulation, but with greater facility; he continues in this manner until the hernia is so far reduced that he can grasp it with the hands, so as to compress it in its whole circumference, and thus reduce it as he would treat a smaller hernia. By this manipulation he has many times reduced hernias which have resisted the common methods, even when practised by experienced surgeons.

M. Gerdy also recommends the following modifications in the operation which he has practised as surgeon to the Hôpital Saint-Louis. After making the first incision through the integuments with a knife, he often completes the first part of the operation with straight probe-pointed scissors. The advantages consist in his operating more quickly, as he uses no director; in being able to distinguish better the parts raised on one of the blades of the scissors; in being more certain of cutting what he has seized, whilst, with a bistoury, the movement of the patient or assistant, or his own want of address, may cause the incision to be deeper than was intended. Scissors cut as well and clean as a knife, and, as it is only required to divide cellular or thin fibrous layers, there is no fear of that contusion which scissors are said to cause, the importance of which has been exaggerated.

M. Gerdy was induced by the following operation to invent a new form of knife for dividing the stricture. In operating for strangulated hernia, he found, after opening the sac, that the stricture was so narrow as to prevent his passing a director with the bistoury. He did not dare to pass a probe-pointed bistoury, flat, for fear of wounding the intestine. He then bent at a right angle, to an extent of two or three lines, the end of a silver director, and introduced its point. When he had passed the limits of the stricture, he depressed the body of the instrument perpendicularly to the trunk of the patient, so that the bent end of the sound was crooked round the posterior part of the ring, which he seized as by a hook. Then, whilst drawing the director gently towards him, he introduced into its groove a straight and acute bistoury, without fear of wounding any thing, as its point was lodged in the angle of the bent director, and the division of the stricture was easily effected. In consequence of this operation, M. Gerdy constructed a straight bistoury, about two lines wide in its whole length, terminated by a small cylindrical tongue, rather flattened, about one line in length, and united at a right angle to the end of the blade. The point of union was carefully rounded. Nothing can be more simple than the way in which it is used. The end of the tongue of the bistoury is introduced, guided by the finger, between the stricture and the strangulated mass: it passes as easily as a probe; the handle is then depressed, and the curved end of the bistoury passes up behind the ring. If, on depressing the handle, the instrument is instantly drawn towards the operator, it is impossible to wound the epigastric artery, even if it is in the way. To make more sure that the artery is not between the hook and the ring, the finger, whilst the operator draws the instrument to him, may be placed in the ring to ascertain if the pulsations are to be felt. The bistoury is then to be elevated, so as to divide by pressure the ring and corresponding portion of the sac.

*Archives générales de Médecine. Avril, 1836.*

*On the Employment of Muriate of Barytes in the Treatment of White Swellings.*  
By M. LISFRANC.

The "Gazette Médicale" reports a clinical lecture of M. Lisfranc's, in which he relates the results of his experiments with this medicine, which has been long known, but has been recently brought into notice by M. Pirondi, of Marseilles.

Six grains of muriate of barytes are dissolved in four ounces of distilled water, of which one spoonful is taken every hour, except one hour before and two hours after each meal. In order to tolerate the medicine, the patient must abstain from wine and meat, taking only water and vegetable food. The bottle should not be exposed to the sun, or the salt will be precipitated, and the last spoonfuls contain a greater quantity: to avoid this, it should always be shaken. Sometimes the medicine produces slight pain in the stomach or a feeling of weight; but, if other symptoms do not follow, the stomach gradually becomes accustomed to the remedy, and the pain ceases. If, on the other hand, nausea, vomiting, or even some slight symptoms of poisoning come on, the medicine should be suspended, and cautiously resumed. The climate has some influence; for, although at Marseilles two drachms have been given, M. Lisfranc has never been able to increase the dose in Paris beyond forty-eight grains, and often he has been unable to reach that. The unpleasant symptoms have been removed by whites of eggs. Numerous patients have been submitted to this treatment, and the following are the conclusions which M. Lisfranc has arrived at.

1. Generally the white swelling has been much amended, and sometimes cured.
2. The benefit has been greatest amongst the scrofulous.
3. In some very few cases the muriate alone has cured.
4. After a certain time, the disease having become stationary, it was necessary to employ another method. At a later period, the renewed use of the muriate has produced excellent effects.
5. It may be employed both in the acute and chronic stage of white swellings.
6. Serious accidents have never resulted from its use; the slight symptoms before mentioned have always yielded readily.
7. A frequent effect is a diminution in the frequency of the pulse; this falling from sixty or eighty to forty or fifty, or even to twenty-five.
8. In some circumstances the medicine, continued at the dose of twelve grains during the month, has produced as much amendment as in other cases where the dose has been gradually augmented.
9. Where the patients have been slightly inconvenienced with the medicine, it has been most useful.
10. Compression and local abstractions of blood have been often combined with this treatment, and with extreme advantage.

M. Lisfranc considers muriate of barytes, given according to M. Pirondi's method, as a truly valuable acquisition to surgery, ("une vraie conquête chirurgicale.") *Gazette Médicale de Paris.* No. 14. 2 April, 1836.

*On the Cure of Intestinal Fistulæ by the Actual Caутery.* By Dr. FINGERHUTH.

THE success attending the employment of the hot iron in the cure of artificial anus, already recommended by Dieffenbach, is confirmed by two cases related by Dr. Fingerhuth.

In both, abdominal inflammation, caused by violent blows, had been followed by external abscess, to which succeeded discharge of fecal matters. Various cauteries were employed to destroy the membranes lining the fistulæ, and to convert them into granulating surfaces, but without producing their complete obliteration. The fistulous openings, although somewhat diminished by imperfect granulations, showed no tendency to become closed. Cauterization was then adopted by means of an iron, corresponding in diameter to that of the fistulæ, and the temperature of which was scarcely elevated to that of red heat. Luxuriant granulations soon covered the cauterized parts, the fistulæ diminished, and the surfaces being again destroyed by a heated iron corresponding in size to the apertures which remained, they were eventually cured.

*Wochenschrift für die gesammte Heilkunde,* No. 6. 1836.

*Case of Local Hereditary Relaxation of the Skin.* By Dr. GRAF, of Königsberg.

In his forty-seventh year, a strong man, the only exception to whose perfect health was a slight hæmorrhoidal complaint, first noticed a relaxation of the skin of the left side of his neck, and of the lower eyelids and the parts beneath them. The malady increased to such an extent, that in a few months the skin in these parts hung in the form of sacks; the skin being thin and covered with transverse and longitudinal furrows. The patient (a Russian) said that the malady was hereditary in his family. His grandfather, a year after his return from an imprisonment in Turkey, in which he had been exposed to great bodily and mental sufferings, began to be affected with the same disease, situated in the lower eyelids; and the deformity was so great, that he was obliged to confine himself entirely to the house. In his case the affection commenced in his forty-seventh year. He died at an advanced age, leaving two sons and a daughter. In her forty-fifth year, the daughter became the subject of the same malady, and, as she was unwilling to submit to an operation for its removal, she entered a nunnery, where she died very old. The elder brother was similarly affected in his forty-third year, the deformity being seated in the lower eyelids and left side of the neck. The parts were removed, and the disease did not return. The younger brother continued entirely free from the disease, and died in his seventy-first year. He left one son, the subject of the case which is here related.

The relaxed skin situated in the lower eyelids was operated on, in the same manner as a case of entropium. The wound healed by the first intention, and the deformity was removed. As the deformity of the neck could be conveniently concealed by the patient's dress, it was not removed by the knife. The patient was simply advised to apply to the part strong astringent remedies; and, in order to increase the tone of the whole skin, to use mildly astringent baths, as cool as possible.

*Wochenschrift für die gesammte Heilkunde*, No. 15. 1836.

## MIDWIFERY.

*History of a successful Case of Cæsarean Section.* By Dr. MEYER, of Minden.

THIS is the fourth time Dr. Meyer has performed this operation, and three of his cases have terminated favorably. The subject of the following was the wife of a shoemaker, named Holle, residing at Minden, a woman of small size and slender make, aged thirty-eight, who had previously enjoyed good health, and borne three children easily and without any bad consequences. After this she was attacked with an arthritic affection, which, from poverty, privations, grief, and want of timely assistance, had increased to such a degree, that, for the space of a year, she only left her bed occasionally, and was then merely able to crawl about her room, bent double and holding by the chairs.

In this state she became again pregnant; an occurrence, of which the first intimation was given by the motions of the fœtus in utero. On the evening of the 19th of June labour came on, and towards morning the midwife in attendance, having discovered an abnormal state of the pelvis, advised her to have the assistance of an accoucheur. A neighbouring physician, Dr. Heilbronn, was called in, who, finding the pelvis so deformed as to render artificial delivery by dismemberment or the Cæsarean section unavoidable, ordered the patient to be bled, and requested Dr. Meyer to take charge of the case.

An examination per vaginam showed that the pelvis was excessively deformed. On introducing the finger, which was done with difficulty, owing to a bending inwards of the ossa ilii and pubis, the summit of a round solid body was felt, which at first might be taken for the head of the child, but a more accurate examination proved it to be the distorted promontory of the sacrum, which projected close to the retreating symphysis pubis. Hence it was immediately concluded that the child lay entirely in the false pelvis; a circumstance which also explained the extreme prominence of the belly, which rested with the navel touching the external parts of generation.

Besides that the child was still living, the impossibility of getting at it through the vagina determined Dr. Meyer to abandon at once the idea of dismemberment, and he decided on this plan of operation, which the mother also pressed for; although, from her unfavorable condition, there was little hope of saving her. The further proceedings are thus described by Dr. Meyer:

"The patient was carried to the table, and placed on a straw mattress. The thighs could be separated only so far as merely to afford room for the hand of an examiner; the lumbar vertebrae appeared to be ankylosed with each other and with the sacrum, and it was impossible to place her in an horizontal posture. In this half-sitting posture, the abdomen presented a space of only about four inches from the umbilicus to the pubes. Notwithstanding this, and the presumption that the placenta lay in the line of the proposed incision, I made choice of it, for reasons which seemed to me conclusive.

"Two assistants stood, one on each side of the patient, with large soft sponges, warmed and slightly oiled; while Dr. Heilbronn stood at her feet, ready to hand the instruments and take hold of the child. The abdomen was then firmly and powerfully drawn up, and an incision, about four inches in length, was made through the integuments, commencing as close as possible to the umbilicus, and terminating at the pubes. The division of the linea alba and the peritoneum, to the same extent and in the same direction, gave exit to a considerable quantity of water, showing the coexistence of ascites. The discharge of this fluid, however, diminished the enormous tension of the abdomen, and contributed to facilitate the delivery. In all my former cases I had found the uterus extremely thin, scarcely thicker than stout paper, and easily divided: in the present instance, however, the walls were unusually firm and three lines in thickness. A new obstacle here arose: in cutting through the uterus, the knife entered the placenta, which was attached exactly opposite the line of incision. The consequences were, a division of the larger vessels which are collected about the centre of the placenta, giving rise to a considerable hemorrhage and a further interference with the previously limited space for the introduction of the hand and the passage of the child. No time, however, was to be lost: the section of the anterior wall of the uterus was speedily completed, the necessary detachment of the placenta was accomplished without any excessive hemorrhage, and the right knee of the child presented. As the opening in the womb was scarcely large enough for the passage of the head, it was necessary to extract the arms; after which the head followed, not without some resistance, yet without any laceration of the uterus. The extraction of the child was followed instantly by a remarkable contraction of the womb, and the bleeding stopped.

"Vomiting came on, accompanied by spasmodic contractions of the abdominal muscles, so that the assistants were obliged to direct their whole attention to the intestines, which were protruded with great force, and which were returned and kept in with much difficulty by the oiled sponges. When the blood and aqueous fluid were removed from the cavity of the abdomen, the uterus was seen contracted to about the size of two fists; and, as the somewhat swollen edges of the incision were tolerably approximated, the external wound was united by the bloody suture without further delay. After it was finished, a repetition of the vomiting forced a piece of omentum, about two inches long, through an interval between the sutures, two inches below the umbilicus: this was removed with the scissors without any hesitation. Immediately over the pubes an opening was left, about an inch in length, into which a tent of lint was inserted; compresses were placed at each side of the wound, a twelve-tailed bandage applied, and, in half an hour from the commencement of the operation, the patient, who during the whole time neither stirred nor uttered a single moan, was laid comfortably in bed, the vomiting had ceased, and the cough was less troublesome. The child, a male, came to its full time, and twenty inches in length, but imperfectly nourished, had breathed immediately after delivery, cried, and was doing well. About half an hour afterwards, during a violent paroxysm of coughing, a full half-ell of intestine was forced through the opening at the lower end of the wound, and lay between the thighs distended with flatus. Dr. Meyer, unwilling to undo the bandage in the absence of proper



assistants, fortunately succeeded in reducing it by the taxis, and secured the opening with a compress and strips of adhesive plaster."

The patient ultimately got quite well.

From the successful termination of this and two other cases, Dr. Meyer is led to the conclusion that the Cesarean section is much less dangerous than is generally supposed; that, when we have recourse to it in time and under favorable circumstances, it is oftener followed by a happy result than other violent modes of artificial delivery, adopted in case of great contraction and abnormal formation of the pelvis; and that, generally speaking, when there is a great probability of saving the mother, it should be preferred to dismembering the living child. Leaving the question undecided, whether the lateral incision should be selected because the section of the anterior wall of the uterus is likely to meet the placenta, his experience inclines him in all cases to make choice of the linea alba. Finally, he corrects a statement made by him in a paper inserted in Siebold's Journal, 3d band. 1c. Heft, that, "in such operations, only one intelligent assistant is necessary;" and declares it to be his conviction that three intelligent assistants are requisite,—two to prevent the protrusion of the intestines, and a third to remove the placenta and fœtus.

*Neue Zeitschrift für Geburtshunde.* Band. iii. Heft 1. 1835.

*Case of Extra-uterine Pregnancy.* By Dr. LÖSCHER, of Lübben,  
and Professor BUSCH, of Berlin.

THE wife of a taylor, at present in her thirtieth year, the mother of several children, ceased to menstruate in April, 1830. Other signs of pregnancy soon manifested themselves; viz. enlargement of the belly, changes in the breasts, and motions in the abdomen. These last were felt very strong in the sixteenth week, and were quite different from those of former pregnancies. Shortly after the twentieth week, she could distinguish accurately, in the left side of the belly, a round hard swelling, which she recognized as the head of a child; and from time to time individual parts of the child could be felt much more plainly than in former pregnancies. The motions, felt only at the upper circumference of the belly, which was distended on both sides, became gradually more painful, particularly at certain points, where the abdomen was so much protruded by its contents that she expected every moment the integuments would burst, and the child force its way through. The enlargement of the abdomen increased with surprising rapidity, so that, towards the end of the sixth month, it was as large as in the last month of ordinary pregnancy. The poor woman's condition was further aggravated by frequent attacks of colic and obstinate constipation yielding only to medicine, and by considerable swelling of the lower extremities. When at length the term of delivery approached, the belly, instead of sinking, remained full in the epigastric region; high up, the child could be felt lying transversely, and the patient had great distress of breathing. Slight pains, shooting from the spine to the thighs, indicated the commencement of labour; and a moderate discharge of blood rendered the presence of the district midwife desirable. Two entire days passed in this manner; the child moved briskly, but only in the upper part of the belly, and the pains became gradually weaker, when suddenly a large quantity of water (a bucketful, according to the patient's account,) was discharged from the vagina. The belly was thereby rendered much flatter, but the child still remained above in the same transverse position, and continued to move until the mother was seized with an universal rigor, when the pain entirely ceased, and the child gave no further signs of life. The midwife was again called, but could not be prevailed on to come: she assured them it was quite a mistake to suppose that labour had commenced, and that they must wait for stronger pains. Meanwhile, the favorable moment for saving the life of the child had passed by: it lay like a foreign body transversely in the umbilical region; milk flowed for several days from the breasts. After six weeks of distress, a copious flow of the menses appeared, (which continue still regular,) and her general health slowly improved; but she was weaker, had frequent attacks of syncope; the pains in the belly, which were generally moderate, became greatly aggravated before and during the menstrual period, and the tendency to constipation remained.

The belly sank by degrees; the child grew gradually smaller, harder to the touch, and as it were shrivelled up; it became also proportionably more moveable. During the course of five years the patient was examined by several physicians, who obtained a true knowledge of her condition, which she had long suspected; but she rejected every proposal of an operation, however easy of accomplishment and free from danger it might have been depicted to her. In fact, on several occasions, it appeared as if nature was about to form an abscess for the purpose of removing the child, which had now become as it were a foreign body; but the pains and other signs of inflammation in the vicinity of the umbilicus disappeared spontaneously. Nothing further was done than to apply a bandage to give adequate support to the abdomen, and to obviate the costiveness by the use of rhubarb and aloes.

When I examined her for the first time, on the 5th of May, in the sixth year of her pregnancy, her state of health was tolerably good. In addition to the pains before mentioned, her yellow clay-coloured hue, her sunken eyes, and her countenance, which wore a peculiar expression of suffering, betokened the existence of abdominal mischief. On making an examination per vaginam, which did not give the slightest pain, I found the uterus regularly formed, the cervix long and thick, the os uteri open, directed backwards, and deeper than usual. The belly was still remarkably swollen, almost as much as in the seventh month of a regular pregnancy: from the pubes to the navel it was so soft that I could pass my hand back almost to the spine without meeting the womb or any solid body; but, in the umbilical region, I could feel quite distinctly the child, hard and shrivelled, about twelve inches in length, lying transversely, the head bent on the breast, and the lower extremities turned towards the left side of the mother. I could also distinguish other parts of the child, as the elbows, shoulders, and ribs. It appeared to lie quite free in the cavity of the abdomen; for I could turn it in its long and transverse diameters, almost without giving the patient pain. Still, the usual position, before mentioned, is the most agreeable. Any slight rudiment of the placenta still remaining must be attached at the place where the child is connected to the mother by a string of withered funis. From the great mobility of the child, and from the possibility of grasping the abdominal integuments round it, and making them glide over it, as well as from the obstinate constipation, a portion of the small intestine would appear to be the spot where the fructified ovum grew, and derived its nutriment from the mother.

There can be no doubt that this is a case of extra-uterine and abdominal pregnancy, with which was combined, originally or subsequently, a dropsy of the uterus, although this organ is now free from every morbid affection. If the fœtus be not already a *lithopædion*, it will assume that state by remaining longer in the abdomen. As it lies close behind the integuments of the belly, delivery by gastrotomy would not be liable to great difficulties, particularly as the linea alba offers the most favorable situation for the incision.

*Neue Zeitschrift für Geburtshunde.* Band iii. heft 2. 1835.

#### *Case of Fatal Hemorrhage from an Erectile Tumour of the Uterus.*

By Professor KILIAN, of Bonn.

A. B., twenty-four years old, strong and well-made, was admitted, in an advanced stage of pregnancy, into the Lying-in Hospital at Bonn. She was then extremely healthy, and did not remember to have ever suffered from illness. The menses made their first appearance in her fourteenth year, and afterwards regularly every three weeks. She had menstruated once during her pregnancy. At the expiration of her time she was delivered of a boy. Half an hour after delivery, the placenta came away, almost without assistance. At that time she was so well, that her medical attendant joked her on a presentiment of the fatal termination of her accouchement which she had frequently manifested, and which she, notwithstanding, still continued to nourish. The first three days subsequent to her delivery passed off without any symptom of disease. The secretions were healthy, and the general state of the patient highly satisfactory: but, during the

afternoon of the fourth day, Dr. Kilian was sent for in great haste to see the patient, who was described to be swimming in her blood.

About two o'clock, whilst suckling her infant, she had exclaimed that she felt something boiling hot flowing between her legs, and immediately fainted. Before the nurse and house-surgeon could come to her assistance, the hemorrhage had ceased. When Dr. K. arrived, she had in a great measure recovered from the fainting fit into which the sudden loss of two and a half pounds of blood had thrown her. He proceeded to an examination, both externally and per vaginam. He found the uterus properly contracted, uniformly firm, and free from pain on pressure. The os uteri presented no coagulum, and was not more open than usual four days after delivery. Dr. K. was perfectly ignorant, and had indeed not the most distant suspicion, of the cause of the hemorrhage; for he had already carefully ascertained that the entire placenta had come away. Under these circumstances, all that could be prescribed were general preventive measures; such as the horizontal posture, repose, and cold applications to the external parts of generation, &c.

The patient continued gradually gathering strength till the 7th of February, when she was visited by a precisely similar attack. An examination was again made, but without any better result, and the former measures were continued. The patient recovered in a great measure her former strength; but, on the 13th of February, she was again surprised by a sudden hemorrhage. In all these attacks the blood uniformly ceased to flow before the nurse could reach the patient. This time the quantity lost amounted to about one pound and a half. Dr. Kilian was now in the greatest embarrassment. Having no knowledge of the essential nature of the disease, he was obliged to proceed empirically. He ordered bark, and the former measures to be continued.

On the 26th of February, the patient again lost two pounds of blood in a similar manner. Moreover, her subsequent prostration and debility were such as to leave no hope of her recovery. Opium was prescribed, and produced temporary relief; but the progress of the disease to a fatal termination was evidently not to be thwarted. The patient exhibited the greatest despondency, and kept continually sinking to the foot of the bed, notwithstanding the exertions of her attendants. The circulation was rapid, and the respiration correspondingly affected. Nevertheless, the patient's appetite continued tolerably good, and she was refreshed by sleep at intervals.

On the 3d of March, during the visit of the physician, the patient again exclaimed, in a weak voice, that she was bleeding: scarcely had she spoken when she was seized with convulsions, violent at first, and gradually weaker, amid which she expired.

At the post-mortem examination, all the viscera were found in a normal condition, except the uterus, and a cursory inspection of that did not betray its disease. It was pale, contracted, and firm; but on its front surface was observed a circular spot, rather larger than a half-crown piece, of a pale red colour, and less firm than the rest. An incision was made in the uterus posteriorly, and on its internal surface was discovered a tumour, corresponding to the above-mentioned spot, two inches long, and one and a half broad, of which the covering membrane hung down into the cavity of the uterus, and thus facilitated the inspection of its internal structure. This was extremely vascular: on looking into it, the open mouths of innumerable vessels were easily discernible by the naked eye. Around the tumour, the substance of the uterus was rather softer than elsewhere, and the numerous vessels leading towards it formed a concentric network.

A preparation has been made of this uterus, and it is now in the museum of the hospital.\*

*Hannoversche Annalen*, B. i. heft 1. 1836.

\* A case resembling the above is related by Dr. Carswell in his tenth Fasciculus (HEMORRHAGE), and a beautiful representation of the tumour given in the fourth Plate (Fig. 2).—Eds.

## HYGIÈNE.

*On the Causes of Colica Pictonum amongst the Workmen who prepare White Lead.* By A. CHEVALLIER.

[IN a previous number we gave the results of M. Chevallier's careful researches into the diseases to which printers are subject; he has now, with similar industry and skill, investigated the effects of white lead on workmen, with a view to the amelioration of their condition.]

Workmen who use lead in any way are liable to contract "the painter's colic;" but M. Chevallier has confined himself to the study of this disease among those employed in manufacturing white lead (*ceruse*) only. For this purpose the following questions were addressed to the manufacturers, chemists, and medical men attached to the manufactories or to the hospitals to which the patients were sent, and the answers contain an analysis of their replies.

1. Are the manufacturers of white lead numerous in France?—About 450.

2. Are women and children employed as well as men?—Women, and children from fourteen to fifteen, are employed.

3. Are the men, the women, or the children most subject to colic?—Some manufacturers say the men; but others, who employ women, affirm that they are most liable from their susceptibility. Dr. Renaudin thinks that, if women are less liable, it is because they are not employed in powdering the white lead. It has been remarked that those of a nervous constitution are most liable to it, and the disease is more severe. Tables kept by physicians attached to manufactories are required to solve this question.

4. Does the disease affect all the workmen, or one workman many times?

The answers differ, but they prove: 1. That many workmen pass whole years without an attack; but these are men born in the country, who take much milk, and systematically avoid all excesses. 2. Relapses are frequent, and particularly so if the workman goes back to his work before he has regained his strength. 3. Imprudence and excess, rather than the labour itself, predispose to the disease. 4. Some men work for three years without disease, others are attacked in two or three weeks. Dr. Renaudin says, all are destined to have the disease: M. T. Desplanches says, all have it, because precautions are not taken in the establishments.]

5. Does the disease attack the same workmen many times?—Yes; and relapses are most frequent after a violent attack. Those that have had it are most disposed to have it again, and after a second or third seizure should give up the employment. Workmen, however, have been known to have had it five, six, seven, or eight times. M. Dehéque knew an old man who had had it eleven times: he was a clever workman, but lazy, drunken, and in a constant state of brutishness; he trembled, and had lost his beard, eyebrows, and almost all his hair; he seemed always asleep, spoke with difficulty, but worked and lived hard, sleeping well on straw, eating little, drinking much in small quantities; his face was swollen, and his complexion white, soft, and shining.

6th. Is the temperature a predisposing cause of the disease?—At Lille it was remarked that the disease was more violent during intense heat and great cold; and this is confirmed by the admissions into La Charité in 1833; for, during January there were fifteen individuals admitted with this colic, and in July forty-five. At Strasbourg the disease was most frequent in damp winters. M. Fee says that the workmen have observed that those who live in the manufactory are more liable to it than the others; and that those who were obliged to walk some distance into the country to their homes were hardly ever seized.

7th. Are these diseases ever serious or fatal?—1. When suitable precautions are taken the disease is not serious, particularly if the workmen cease to work at the white-lead. 2. It may be more serious if there are complications. 3. After a third or fourth attack, it may produce acute pains in the limbs, and in the end paralysis and incapacity to work. 4. The first or second attacks, when well treated, leave no dangerous sequela. 5. Death may ensue if there is negligence on the part of the workman. Dr. Renaudin says on this subject, that "workmen who have had it as many as six times often die, particularly if it reacts on the brain,

producing epilepsy, which is rapidly fatal notwithstanding every attention, or the limbs become paralytic; which state is very difficult to cure, and often incurable." Out of 3,569 cases of painter's colic reported by various authors, there are ninety-five deaths, or a mortality of little less than one in thirty; and this is owing to complications or affections of the nervous system.

8th. How long may a workman work in a white-lead establishment?—Those who are regular in their conduct, sober, and use much milk, may work for an indefinite period. Among eighty-two workmen in M. T. Lefebvre's establishment, a great part have worked three, four, five, six, and seven years without suffering from such attacks as incapacitated them. In other places similar observations cannot be made, as the men only work there when there is no employment elsewhere. "There are a number of instances of men working twenty or thirty years where the ceruse is made by the Dutch process." (M. Stollé, of Strasbourg.)

9th. Do the workmen die young?—"Those who are most susceptible of it always die prematurely, and those who have the most power of resistance die before their natural term." (Dr. Renaudin.) "The trade does not seem to influence the length of their life, but they become old and infirm prematurely." (T. Desplanches.)

10th. Are any precautions taken?—Numerous measures have been adopted, and attempts made to combat the carelessness of the workmen, who will not willingly follow the recommendations. The men have been recommended not to touch the oxide of lead unless it is wet, to avoid the emanations from melting lead, and the dust of white leads; to cover their mouths with a wet cloth, and their heads with linen whilst packing the ceruse in barrels; to use great cleanliness, washing their hands and changing their outside garments before eating; to drink milk and beer: when this advice has been taken, the men have been rarely attacked, and spacious shops, ventilated by free currents of air, have diminished the disease.

11th. Are medical men attached to these manufactories?—To some of them only: in others, the sufferers are immediately sent to an hospital. In Germany and Holland, where ceruse manufactories are very numerous, the government obliges the manufacturers to intrust the health of their workmen to a medical man.

12th. What parts of the process appear to be particularly hurtful?—1. The separation of the layers of oxidized and carbonated lead from that which is not so. 2. The remelting of the fragments of lead. 3. Packing the ceruse in barrels. 4. Sifting the ceruse.

13th. What precautions are or could be taken to render these processes less dangerous?—In some manufactories where the fragments of lead are remelted, there is a lofty ventilating chimney, with a ventilator of sufficient power to expel instantly the noxious vapour; in others the sieves and mills are enclosed in wooden frames, forming partitions separating this part of the workshop from the rest; also, when the barrel of ceruse is moved, it is covered with a sheep's skin. The following plan has been adopted for some years by M. Reboul, of Pézénas:—

The melted lead is poured on plates of copper in thin layers, a foot long and eight inches broad, which are rolled up spirally, so as to be eighteen or twenty lines in diameter: these are placed in a vessel, and distilled vinegar poured over them: they are then withdrawn and exposed to the air: they are next placed in deal boxes, having a grating at the bottom, and seven or eight of these boxes (which are of the same size,) are piled one on the other in a drying place. The base of each pile is a reservoir of stone, or of wood lined with lead, having a waste-pipe passing through the wall. In the middle of the room is a charcoal furnace, over which is placed a copper vessel half filled with water. In the ceiling are holes closed by wooden trap-doors, corresponding in number to the piles of boxes, through which distilled vinegar or vinegar holding lead in solution, is poured in every morning: after this the trap-doors are closed, and during the day smaller quantities are frequently poured in through holes made in the trap-doors, which dropping guttatim from box to box and thence into the reservoir facilitates in its passage the formation of the carbonate of lead. The liquor which has not been absorbed runs out of the reservoir, and is used again. When the lead is almost entirely converted into ceruse, water is poured over it, instead of vinegar, to wash away any vinegar or acetate. The lead, thus changed into ceruse, is thrown into a large tub of water, and agitated with a spatula; the ceruse is thus separated from the non-carbonized lead and par-

ticles of oxide, which sink, and is held in suspension by the agitation of the water with which it flows out into other tubs, and subsides. This separates the greatest part of the ceruse: to obtain the rest, the residue is placed in a wooden barrel with some pieces of quartz; water is added, the barrel revolved, and the powders of lead allowed to fall again into the tub. Another washing separates the ceruse, and the grey powder which remains is spread over new rolls of lead which are placed in boxes for the drying stove. The other manipulations relating to grinding and drying it are common to all manufactories. The novelty in the process consists in the arrangement of the boxes and drying stove; in washing the lead with vinegar and solution of acetate, and in two ways, rapidly and slowly; and in the use of the barrel and quartz.

M. Reboul says, in a letter, dated 2d March, 1834, that he has used this plan for fifteen years; during the former part of this period many workmen were attacked by the lead colic, but for the last nine years there has been no case. This is simply owing to avoiding the vapours of the salts of lead and not respiring the air charged with the dust of these salts; two precautions which could be carried into effect in the process he adopts, as the ceruse is prepared in drying stoves, which need not be entered until they are cooled and ventilated; and the ceruse thus prepared being in the state of paste, need not be powdered, but only washed, dried, and packed.

14th. Are any preservatives against lead colic known in the manufactories?—No actual preservative is known, but precautions are taken which render accidents less frequent. In some manufactories, milk, butter, beer, purgatives, water acidulated with sulphuric acid, are given to the workmen; but the best preservative is a glass of water impregnated with sulphuretted hydrogen, taken every night on leaving the workshop: the water of Barèges or of Enghien will answer the same purpose.

15th. What are the precursory signs of the disease?—According to the manufacturers, those who are about to be attacked appear depressed, the face wrinkled, pale and yellow, the eyes hollow; they are low-spirited, and do not eat; there is a yellowish tint round the nose and mouth, the lips tremble and are cold, and there is constipation. M. Renaudin says, all the workmen are pale whether ill or not, and their teeth of greyish colour approaching that of lead; but the true precursory sign is numbness of the arms and legs, three or four days after which the colic comes on.

Such is a summary of the principal facts obtained by M. Chevalier; and he concludes by giving a series of directions to the manufacturers and workmen, with a view to diminish the disease, and adds a new mode of treatment.

#### *Advice to Ceruse Manufacturers.*

In order to preserve the health of the workmen, it is advisable—1st, to enforce strict cleanliness, and washing the hands before eating and leaving the shop, and to prevent eating in the workshops; 2d, to establish thorough ventilation; 3d, employ means to separate the scales of white lead with as little dust as possible. (For this purpose the proposition of M. D'Arcet, to pass the leaves of lead between a grooved cylinder enclosed in a wooden frame, instead of beating them, may be attended to.) 4th, to isolate the mills and sieves, and to place them in close wooden frames. 5th. That when there is dust of the ceruse in the workshop, the workmen should cover their mouths and noses with a handkerchief slightly moistened. 6th. To provide a medical attendant to examine the workmen frequently. 7th. To require those who have any precursory symptoms to leave off work for one or more days, according to the opinion of the medical man. 8th. To oblige the workmen to wear smock-frocks, (*blouses*), and to require them to leave these garments in the workshop, and to have them washed from time to time, and to reason with them on their carelessness, to which the majority of accidents are traced. 9th. To prevent debauchery among the workmen; to employ only sober men, and to discharge those who persist in drinking. 10th. To introduce the plan of drinking daily on leaving work a glass of water charged with sulphuretted hydrogen, to neutralize the effects of the ceruse which might have been absorbed. (This is easily made by passing into water sulphuretted hydrogen gas disengaged from sulphuret of iron by weak sulphuric acid.) 11th. To try means which may probably be preservative that are suggested by the medical man attached to the manufactory. 12th. To use the least dangerous processes.

#### *Advice to Workmen.*

1. To be sober and abstain from wine and venereal excess.
2. To be extremely

clean. 3. To take solid nourishment, and not to eat largely on Sunday and Monday, and then scantily during the rest of the week. 4. To inform their master whenever they feel symptoms of indisposition; such as loss of appetite, or of spirits, numbness in the limbs, &c.

*New Treatment of Diseases produced by Lead.*

The liver of sulphur has been proposed since 1777 by Navier, as a counter-poison to lead; but he did not confirm its efficacy by actual experiment, and Orfila having shown its inapplicability, it fell into oblivion. In 1814, M. Chevalier, having convinced himself that sulphuret of lead had no action on dogs, whilst carbonate of lead was injurious, inferred that hydrosulphuric acid might be advantageously employed as a counterpoison to the salts of lead; and four years afterwards, being in a manufactory where two men were attacked with violent lead colic, he gave them about a pint of hydrosulphuretted water, which he found in the laboratory, with immediate relief. He subsequently found similar benefit in his own person. M. Ratier has since confirmed these facts by many trials at the Hospital of La Charité, and gives the following directions. Three indications are to be fulfilled:

1. To neutralize the poison, by giving internally a quantity of hydro-sulphuretted water, proportioned to the known or supposed quantity of the salt or oxide of lead absorbed. M. Rayer has used the "eau d'Enghein," but either of the following artificial preparations may be substituted:

(No. 1.) Take nineteen pints of water, and add one pint of water saturated with sulphuretted hydrogen, in which twelve grains of carbonate of soda had been previously dissolved.

(No. 2.) Dissolve five grains of sulphuret of potash in a pint of water.

The more recent the colic, the more marked the effect. Many obstinate attacks have yielded to this treatment only.

2. To relieve constipation where it exists. For this purpose, M. Rayer prescribes forty-eight grains of scammony and the same quantity of jalap in twelve pills; the patient to take from two to six until they operate. If the constipation continues, a lavement, containing an ounce of senna and two or three ounces of castor-oil.

3. To relieve pain and to procure sleep. For this purpose, one grain or one and a half grain of extract of opium is given at night.

By these means, M. Rayer has rapidly relieved the effects of the salts and oxides of lead, sometimes on the second day, often on the third or fourth, and rarely beyond the sixth. He has never seen a relapse.

M. Lefebvre has communicated by letter the particulars of four cases of colica pictonum in his manufactory, all of which yielded to the sulphuretted hydrogen treatment alone. Half a drachm of sulphuret of potash was dissolved in a pint of water, half of which was taken in two doses each day. Three were cured in two days, and one in one day.

From the injurious effects which white paint made by carbonate of lead has on the healths of painters, as well as occasionally on the inhabitants of recently painted houses, it has been proposed to substitute carbonate of zinc for the lead. From a report of commissioners appointed by the Academy of Architecture in Paris, it appears that the paint made from carbonate of zinc is not unwholesome, and that it preserves its brilliancy and whiteness. At present, however, it is more expensive than carbonate of lead, which would prevent its general adoption; but, as M. Chevallier suggests, it may be very useful in painting the rooms where sulphur-baths are given, or privies where sulphuretted hydrogen is evolved, which blackens white-lead paints.

[The general circulation of information tending to the prevention of complaints produced by employments to which large bodies of men are necessarily exposed, is one of our most useful and gratifying duties. Indeed, the value of precautionary measures promising security will be gratefully acknowledged by those who have at all reflected on the task they may have frequently performed of urging a man who has a family dependent on him to leave an occupation which is prejudicial to his health, but for which alone he is properly qualified, from having spent his whole life in its acquisition, whilst, at the time they give this advice, they are conscious that the secession of one will only substitute another equally liable to suffer.]

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## PART FOURTH.

**Medical Intelligence.**

## ON THE PRESENT STATE OF MEDICINE IN PRUSSIA;

By J. F. C. HECKER, M.D., Professor of Medicine in the University of Berlin.

## SECOND REPORT.

## MEDICAL SOCIETIES IN PRUSSIA.

THE great general object of Medical Societies is to promote Medical Science, by exciting their members to institute important enquiries, and to make well-grounded observations. All other points which claim attention in such societies,—as, for instance, the social union of the physicians of large towns, the communication of novelties in practice, and the reporting and discussion of medical cases,—are of a subordinate character, although they may be of themselves not undeserving of regard. In the present Report, those Medical Societies can alone claim our attention which stedfastly keep in view the great object of their institution, the promotion of science. Societies which only pursue common-place objects, in which mere form and personal interests are the most conspicuous features, are not at all adapted to excite a useful spirit in their members: indeed, oftentimes they only serve to promote partial views, and, as far as real science is concerned, their operation is perfectly futile.

In the present state of society, the establishment and maintenance of medical associations calculated to promote the progress of science in its higher import, is certainly attended with considerable difficulty. The intellectual combination of the people among themselves is more active than ever; literature has become more generally accessible, and the means of acquiring scientific knowledge have so extraordinarily increased on all sides, that it becomes necessary that all literary associations should possess members alike talented and active, in order that they may obtain and communicate a knowledge of all that is passing in the scientific world, and be able to promote and guide investigations amongst themselves. Thus it can easily occur (and examples of this kind are not unfrequent,) that an active and zealous editor of a Journal, assisted by talented correspondents, can effect more real good than academies whose forms and regulations are become obsolete.

No societies are more calculated, from the nature of their object, to widen and extend real science, than those constituted by the Medical Faculties of Universities. The experience of centuries has shown that they have effected the utmost good for the healing art: the efficiency and influence of professors are far from being confined within the narrow limits prescribed by the formal teaching of their particular branch, but extend, or ought to extend, to the higher and more general departments of science. To deny this, is to fail to comprehend the real spirit of universities; and, should ever this crude idea (which we hear sometimes expressed,) gain ground, we shall most certainly find that the higher scientific branches of medicine will perish in the universities, and the mere practical and manual parts of medical and surgical study will receive attention. Medical Faculties, however, cannot, from their nature and duties, answer all the objects which are desirable; so that the existence of Medical Associations, in addition to them, is not only useful but necessary. Such associations do much good, by promoting the composition and publication



of monographs on difficult subjects, through the institution of prize essays, as well as by exciting general zeal amongst their members. It has frequently happened that learned societies of this kind have given a decided and advantageous direction to medical science, as in the case of the Medical and Chirurgical Society of London, the Académie de Médecine de Paris, and many others.

#### I. THE ROYAL ACADEMY OF THE SCIENCES.

(*Die Königliche Akademie der Wissenschaften.*)

This is the most celebrated and important of the learned societies in Prussia. It was established in the year 1700, by Frederick the First, after the plans and arrangements of that celebrated philosopher, Leibnitz, who was also its first president. Since that time this Society has undergone many changes, amongst the most important of which was that which took place under Frederick the Great. He, having invited to his court a considerable number of celebrated French men of learning, the whole Academy assumed a French complexion, and even its Memoirs were published in the French language. This degrading practice, however, has been long since discontinued, and the Transactions of the Society, which may vie with those of the best academies in Europe in solidity and importance, appear again in the German language. The Academy consists at present of four classes,—the Physical, Mathematical, Philosophical, and Historico-philological. It is proposed to unite these four classes into two groups, namely, Physico-mathematical and Philosophico-historical: however, nothing is as yet decided respecting this alteration. At present the first two classes, as well as the two last, have only one secretary.

The Academy has no president. The king is protector, and confirms the appointment of all new members, whether elected by the members or proposed by the minister of instruction, (*minister der unterrichts angelegenheiten.*) The members are Ordinary, (those who reside in Berlin,) Foreign, and Honorary: among the last are included a considerable number of corresponding members. The Academy has its appropriate building and library, which last principally consists of the Transactions of the most important learned Societies: its income is inconsiderable, and is disposed of partly in salaries to most of the ordinary members, partly in defraying the expense of the publication of its Transactions, and partly as premiums for prize dissertations.

Among the physicians and naturalists who are members of the Academy are Alexander von Humboldt, Leopold von Buch, Erman, Link, Mitscherlich, Ehrenberg, Horkel, Klug, Mueller, Kunth, &c. These belong to the physical class, and their valuable labours are directed to the various branches of the natural sciences. From Ehrenberg and Mueller alone we receive sometimes physiological communications of distinguished value. Practical medicine, in the strict sense of the term, and all that stands in immediate relation to it, is excluded from the higher departments of the Academy.

#### II. THE IMPERIAL LEOPOLD AND CHARLES'S ACADEMY OF NATURALISTS.

(*Academia Cæsarea Leopoldino-Carolina Naturæ curiosorum.*)

This institution was not originally of Prussian origin, although it at present flourishes in the Prussian dominions. It possesses the peculiar and very liberal feature that it is not attached to any particular state, but can choose its president from any of the German territories; and the president so chosen can obtain possession of the archives and library of the Academy, whether he lives in Prussia, Austria, Bavaria, or Saxony.

This Academy is one of the oldest in Germany: it was founded by Johann Lorenz Bausch, a physician in Schweinfurt Franconia. In 1651, he circulated an invitation to all the learned physicians in Germany, to communicate to him any important and rare observations. This proposal gave such satisfaction that, in the following year, 1652, a meeting of physicians took place at Schweinfurt, when Bausch was elected president. The regulations of the

Society, however, were not drawn up until after the death of Bausch, in 1665, when his successor, Johann Michael Fehr, (likewise a physician of Schweinfurt,) completed them. The first collection of the Academy's observations was completed in 1760, but was not published until 1684, under the title "*Miscellanea curiosa, sive Ephemeridum Medico-physicarum Germanicarum Academiæ naturæ curiosorum, Decuriæ I. Annus I. Anni 1670, continens celeberrimorum medicorum in et extra Germaniam observationes medicas et physicas, vel anatomicas, vel botanicas, vel pathologicas, vel chirurgicas, vel therapeuticas, vel chymicas.*" *Frankofurti et Lipsiæ*, 1684, 4to. This, the first volume, was followed by a number of others, but with considerable interruptions. The whole series serves to show, in a manner in every respect interesting, the spirit and progress of the natural sciences in Germany, and indeed has contributed a not unimportant part to the general advancement of science. In the year 1687, the Emperor Leopold I. granted to the society many important privileges, which were still farther extended by Charles VI. (1711-1740). From these two emperors it takes its present name, and it had to thank them for the means of extending its influence. The valuable library of the academy was first founded about 1730, by the then President, *Baier*, a Professor of Medicine in Altorf; and was afterwards increased by important presents. It is at present preserved in Bonn, although the president, Professor Nees von Esenbeck, lives in Breslau. It is to be attributed to the influence of this celebrated president that the academy applies itself principally to the natural sciences, and does very little for the promotion of pure medical science, as the last vol. "*Nova Acta Academiæ, etc.*" *Bonn and Breslau* 1835, 4to., will easily prove.

The academy, however, can boast of possessing the labours of the most distinguished men of the day among its collection, not alone Germana, but also many foreigners. The number of the members who have belonged to the Academy since its commencement is 1,324. At present there are no general meetings of the members, but the business of the society is transacted by letter; and in Prussia free communication is favoured by the allowance of letters on the business of the Society going through the post free of charge. Even down to the present time the antique custom is preserved, by which every member receives a by-name in addition to his own proper name, which additional name must have some historical relation to its bearer: for instance, the renowned Clot-Bey is surnamed *Oribasius*, Professor Pommer of Zurich is known as *Petii*, and the present President is styled *Aristoteles*.

The foregoing are, properly speaking, scientific and not medical Societies; there exist, however, many strictly of this class in the various towns. I will notice the most important.

### III. HUFELAND'S MEDICO-CHIRURGICAL SOCIETY OF BERLIN.

(*Die Hufelandische Medicinisch-chirurgische Gesellschaft in Berlin.*)

This Society was founded in 1810, by Christoph Wilhelm Hufeland, and has borne his name since 1833. Its object is the practical promotion of Medicine and Surgery, and, at the same time, the establishment of a centre for Collegiate Union in Berlin. Therefore, it dispenses as much as possible with all outward formalities, banishing constraint and ceremony, which in the end make these societies often mere parade and extinguish their invigorating spirit. Its meetings are characterised by friendly communication and cordial cooperation.

The Society contains none but active members, and their number is not limited. Since its object is not so much of a public as private character, being rather *inward* than *outward*, it has no honorary members: still its rules provide for corresponding members, for the reciprocal communication of statistical accounts of weather and general medical practice, information as to the prevalence of epidemic or contagious diseases, new remedies, and points of practice, and all new discoveries and accidents relating to medicine.

A committee of ten members is chosen annually, whose business it is to provide for the general welfare of the Society, to elect new members, to propose

new laws and regulations, which, however, must be sanctioned by a majority of a general meeting, before they can come into operation. From among these ten is chosen a director, who holds the situation during his life: it is his duty to open and close the meetings of the Society; to arrange the days of meeting throughout the year, and prepare the list of subjects to be brought before the meeting, with the names of the contributing members; to issue notices to the members, to report on recent occurrences, to introduce strangers to the Society, &c. Two Secretaries are also elected, one for the internal arrangement and the other for the foreign business of the Society. The first has an assistant-secretary, and the other two. The appointment to these posts lasts two years, and can be renewed at the end of that period.

The Secretary for the internal department is obliged to be present at every meeting, to keep the minutes of the Society; or, when he is prevented attending, his deputy occupies his place.

The Secretary for external business is bound to conduct the foreign correspondence, and to preserve reports of the various communications. A Censor is likewise chosen every year, to preserve due order in the meetings. The Librarian, besides the care of the library, superintends the circulation of journals, &c. and the finance department.

New members can be elected every three months, in the following manner: 1, the proposed member must be announced to the director; 2, the director proposes the candidate to the committee, who decide upon his admission; 3, if elected, he is introduced to the Society; but, 4, if rejected, the strictest secrecy is maintained.

The Society holds its meetings every fortnight, on Friday, at five o'clock; the business commences at a quarter past, and is conducted in the following manner: 1st, The reports of the general state of health, the barometrical and thermometrical registers, the prevailing diseases and mortality of the last fortnight, are read by the Secretary. 2, A lecture, or communication of some kind, is made by the member whose name stands on the list for the evening; 3, discussion and observations from the other members. Every physician who is a stranger in Berlin can be introduced to the meetings by a member; but he must be either first announced to the director, or else introduced to him at the time of assembling, and be then, by him, introduced to the meeting.

Berlin physicians, who are not members of the Society, and who wish to be present at any of its meetings, must be announced to the Society on a previous evening through one of the members. The anniversary of the Society, the 1st February, is commemorated by its members,—and, besides this, three other anniversaries are kept: viz. Harvey's, the 1st August; Haller's, the 1st November; and Jenner's, the 14th May. The Society's library consists principally of the best domestic and foreign journals, which previously circulate amongst the members.

The yearly subscription is four dollars (about twelve shillings,) for the general expenses of the Society, and each member is moreover bound to present a copy of any work he may publish to the Society. Since the time of its establishment, the *Hufelandische Gesellschaft* has always continued to fulfil the object of its founder in an exemplary manner; many papers have been brought before the Society possessing a real scientific value over and above their passing interests: it is therefore to be regretted that the Society has not published from time to time reports of at least the best of its fruits. It has, however, preferred a more modest retirement, choosing rather to confine its good effects to its own immediate circle, that extend its influence more remotely. Its transactions are therefore scattered among different journals, as separate essays, or they are entirely lost to the world. It may not be amiss to remark here, that the best form under which the works of really scientific medical societies can be published is beyond all doubt that of the London Medico-Chirurgical Transactions; for, in such alone can the detailed monographical character of a scientific subject be done justice to: strict, precise, and many-sided investigations are the indispensable requisites

of a monograph. Every other lighter form allows a too easy admittance of less important subjects. Writings of this character supersede the so-called "interesting cases," which are really interesting to none but their author, and such brief notices and novelties as can be got up by any physician, however little accomplished, with very little trouble, and which are forgotten in as short a time as was required for their production. Journals appearing at brief intervals, are unworthy of a respectable society; for, although, by their rapid publication, they may have some unimportant advantages, they are in reality mere concessions made to the superficiality of the mass of practical physicians, who have long given up all earnest study, and will only be instructed by such tea-and-coffee reading as will enable them to make it the subject of common conversation.

IV. THE SILESIAN SOCIETY FOR NATIVE IMPROVEMENT AT Breslau.  
(*Die Schlesische Gesellschaft für Vaterländische Cultur in Breslau.*)

This Society has already existed a long time, and is laid out on a somewhat extensive scale; since it consists of the following departments: 1, for the study of the natural sciences; 2, botanical; 3, entomological; 4, geognostical (merely local, however); 5, medical; 6, economical; 7, pedagogical; 8, historical; 9, technical; and 10, medical.

The medical section is of itself a complete and well-organized society: it consists of resident and provincial members, who all belong to the province of Silesia, also honorary and corresponding members. The Society meets every fortnight, and at its meetings are brought forward papers upon all medical subjects, which give occasion to interesting discussions, since Breslau has the good fortune to possess many talented physicians. In 1829, the Society published its first collection of these treatises under the title, "Neue Breslauer Sammlungen aus der Gebiete der Heilkunde, Bd. I." (*New Breslau Collections in the department of Medicine, Vol. I.*) Since which, however, as far as I am aware, it has not been continued. This volume recalls to mind an old periodical journal, likewise published by a Society, and even so named, "die Breslauer Sammlungen," which appeared in the beginning of the last century, and, from the then great scarcity of periodicals, was much read, and, without doubt, effected much good. The Society also publishes every year an account of their transactions and changes: the last, dated Breslau, 1835, proves the praiseworthy activity of the Society. The general secretary of the Society is Professor Wendt, of Breslau. The secretary of the medical section, Dr. Borkheim.

V. THE MEDICAL SOCIETY AT MUNSTER.  
(*Die ärztliche Gesellschaft zu Münster.*)

Notwithstanding Münster, as being the principal town of Westphalia, offers many circumstances favorable to the union of its physicians in general scientific pursuits, still it was not until 1827 that such a Society was firmly established; all earlier attempts at the completion of such a desirable object having completely miscarried. In the year named, a number of physicians and other scientific men combined under the above title; rules were drawn up, and approved; and from that time the Society has given, in its regular monthly meetings, full proof of its activity. At each of these meetings, a lecture is delivered, followed by short communications and discussions. A collection of the proceedings of the Society was published in 1829, under the title "*Abhandlungen und Beobachtungen der Ärztlichen Gesellschaft zu Münster*;" but, as far as I am aware, no continuation of them has appeared since that time. This, however, is not to be attributed to a diminished activity on the part of the Society, but arises from the fact of treatises and collections of this sort meeting with little encouragement in their sale; for, however sterling and important in a scientific point of view they may be, still they never make a profitable "market commodity;" whence it happens that most prefer inserting their treatises in the journals of the day, whereby they are sure to receive a more extended circulation.

VI. THE SOCIETY FOR NATURAL AND MEDICAL SCIENCE AT BERLIN.  
(*Die Gesellschaft für Natur-und Heilkunde in Berlin.*)

This Society was founded in 1810, having for its object the closer union of physicians who wished, through reciprocal communications, to extend the benefit of their scientific investigations. The pursuits of the Society are not limited to medicine in the narrower sense of the word, but include also the various branches of the natural sciences. Its meetings take place every month, when a lecture is delivered by one of the members. The Proceedings of this Society deserve the highest character for the spirit which has always distinguished them. It is therefore the more to be regretted that the Society has not published its labours, but has left it to the individual members either to publish their treatises in any of the journals of the day, or else withdraw them from the public entirely.

The late Dr. Heim, who died in 1834, was the former president of the Society, and the celebrated Rudolphi was the secretary. At present Link occupies the president's chair, and Ehrenberg (who, through his extraordinary talent for observation, has led to such important discoveries in Physiology, Comparative Anatomy, and Zoology,) is its present secretary.

VII. THE MEDICAL ASSOCIATION OF PRUSSIA IN BERLIN.  
(*Die Verein für Heilkunde in Preussen.*)

This Society was established 1832, in consequence of the want felt by many physicians of a sterling and well-edited journal, in which they might publish their observations. Regulations were immediately proposed, and the object of the Society was announced to be the promotion of scientific enquiry in the general circle of medical study. To obtain these ends, the following means were decided upon: 1st. The monthly meeting of the Society; and, 2dly, the publication of a weekly journal, under the title of the "*Medicinishe Zeitung*."

The Society consists, 1, of a Presidency, composed of the President, (the present is Dr. Rust,) Vice-President, Secretary, and Vice Secretary, and the Editor and Co-Editor of the Journal; 2, of a Committee for conducting the publication of the Journal; 3, of ordinary, honorary, and corresponding members. The ordinary members must be Prussian physicians, without reference to their place of residence in the Monarchy, and must have distinguished themselves not only by their general medical talents during many years' active exertion in practice, but must have proved their fitness as members through their general exertions in science, &c. In the meetings of the Society, the principal object is the promoting of reciprocal communications and more intimate acquaintance of the members: therefore, to accomplish this, no written lectures are allowed; but any remarks and results of the passing events, that possess medical or scientific importance, are made the subject of extemporary observation and general discussion. The newest productions of general literature, according to their subject, are also laid before the Society, with short remarks as to their value.

None but foreign physicians can be introduced to the meetings of the Society. The Society celebrates its anniversary on the day of its original establishment by a dinner, to which any distinguished strangers can be introduced, provided they have been previously made known to the presidency. In the course of the fortnight previous to the general annual meeting, the secretary lays before the Society the report of its proceedings, efficiency, and economical relations. At this meeting alone can any changes or extensions of the laws take place, as well as the selections of new members.

The Editor takes upon himself the charge of the editorship of the "*Zeitung*," (the present Editor is Dr. Grossheim, who succeeded the writer of the present article in the beginning of this year,) in which he is assisted by the committee already spoken of.

The "*Zeitung*" includes all branches of medicine, but principally it contains articles on the following subjects:—

1. Reports on the efficiency and result of the various cliniques of the Prussian states.
2. The scientific results of the practice of Prussian physicians.
3. Anatomical, physiological, and pathological notices.
4. Report of the prevailing diseases both of men and cattle.
5. Remarks on new points of practice, or new remedies.
6. Cases from the department of state medicine.
7. Medical topography and statistics of Prussia.
8. Information on mineral springs and baths.
9. Meteorological reports and influence of weather on general health.
10. Notices of such legislative arrangements as are of importance in a medical point of view.
11. Personal notices of Prussian physicians; appointments, promotions, deaths, &c.
12. Bibliographical notices of native and foreign literature.

The articles of this journal which refer entirely to medical affairs, must be as short as possible, in order to maintain the character of the journal: voluminous dissertations are therefore entirely excluded.

Since the Journal belongs to no party, especial care is taken to exclude all personal polemics.

Every member is considered to be *ex officio* an Editor of the journal, and, as such, is expected in his turn to furnish articles for it, but with especial reference to such of its members as belong to clinical institutions; and those physicians of districts (who are appointed as such, and paid by the government in Prussia,) are desired to furnish such statistical reports of the eruption of epidemics, effects of vaccination, cases of midwifery, &c. as may appear of sufficient interest to merit a place in the journal.

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ON THE

## PRESENT STATE OF MEDICINE IN THE UNITED STATES;

By ROBLEY DUNGLISON, M.D., Professor of the Institutes of Medicine and Medical Jurisprudence in Jefferson College, Philadelphia.

### ART. I. OF THE MEDICAL INSTITUTIONS.

#### A. MEDICAL COLLEGES.

WHEN the continent of America was first visited by emigrants from Great Britain, a few practitioners of medicine doubtless formed part of the body; in the first instance, perhaps, leaving the mother country with the same prospects as their fellow-emigrants, but devoting themselves likewise to the duties of their profession, as occasion required. Of the condition of medicine at this early period of the colonial history, we know nothing. It would seem, however, that in New England, for many years after the first settlement of the country, it was deemed indispensable for clergymen to acquire a knowledge of practical medicine; and we find that, not only did they prescribe for the afflicted, but they entered into medical controversies, and wrote treatises on the diseases of the country.

It was not until a short time before the revolution that any attempt was made to establish a medical school in the colonies. As early as the year 1638, the College of Harvard was founded at Cambridge, in New England; and, in 1691 and 1700, William and Mary College in Virginia, and Yale College in Connecticut, were respectively established. Many of the alumni of these institutions, and of Princeton, New Jersey, founded in 1746, visited Europe to attend the medical lectures, in Edinburgh more especially, and, after having graduated, returned to America to practise their profession. Nearly all the most eminent physicians and surgeons who commenced practice before the revolution received their medical education in Europe, and a large portion of

them emigrated from Great Britain; for it would appear that it was not until the political bonds between the two countries had been severed, that the conviction was entertained that the science of medicine could be adequately taught in America.

In the year 1750, the body of Hermanus Carroll, a criminal, who had been executed for murder, was dissected in the city of New York, by Dr. John Bard and Dr. Peter Middleton, two of the most eminent physicians of the day; and this would seem to have been the first effort made in the United States for the purpose of imparting medical knowledge by the dissection of the human body of which there is any record. Some years after this, a course of lectures on anatomy and surgery, accompanied by dissections of the human body, was delivered at Newport, Rhode Island, by Dr. William Hunter, a native of Scotland, and a near relation of William and John Hunter. He was educated at Edinburgh, under the first Monro; went to Rhode Island about the year 1752, and gave lectures on anatomy, on the history of anatomy, and on comparative anatomy, in the years 1754, 5, and 6, to which not only the medical students and physicians, but all the literary gentlemen of the town, were invited.

#### I. UNIVERSITY OF PENNSYLVANIA. (PHILADELPHIA.)

The first conception of a plan for establishing a medical school in America appears to have been formed by Dr. William Shippen and Dr. John Morgan, both native Americans, while engaged in their studies in Europe. In the year 1762, the former of these gentlemen, in the introductory lecture to a private course of anatomy, announced his belief in the expediency and practicability of founding a medical school in Philadelphia. In 1765, Dr. Morgan, on his return from Europe, laid before the trustees of the College of Philadelphia, which had then been in existence as a collegiate establishment about ten years, a plan for the institution of medical professorships, in connexion with the institution under their direction. The plan, strongly recommended by several influential friends of the College in England, was adopted by the trustees, who appointed Dr. Morgan to the chair of the Theory and Practice of Physic. In the same year, Dr. Shippen was chosen professor of Anatomy and Surgery; and, for a short period, lectures were delivered by these two professors on the various branches of the science then deemed essential in a course of medical instruction. In 1767, a system of rules was adopted for the organization of the new school. In 1768, Dr. Adam Kuhn was appointed professor of *Materia Medica* and Botany, and Dr. Thomas Bond of Clinical Medicine; and, on the 21st of June, 1768, a medical "commencement" was held, at which the degree of bachelor of medicine was conferred upon ten individuals. In 1769, the chair of Chemistry was added, to which the distinguished Benjamin Rush was appointed.

As the school advanced, additional professorships were created; but it had not been long in action before a rival institution was established and connected with the university; a circumstance which gave rise to much contention, but was finally allayed in 1791, by a union of the two schools.

The following is the present organization of the medical department of this university.

The faculty consists of seven professors, independently of Dr. Physick, who holds the station of Emeritus Professor of Surgery and Anatomy, but does not officiate.

1. Nathaniel Chapman, M.D., Prof. of the Theory and Practice of Medicine.
2. Robert Hare, M.D., Professor of Chemistry.
3. William Gibson, M.D., Professor of Chemistry.
4. William E. Horner, M.D., Professor of Anatomy.
5. Samuel Jackson, M.D., Professor of the Institutes of Medicine.
6. George B. Wood, M.D., Professor of *Materia Medica* and Pharmacy.
7. Hugh L. Hodge, M.D., Professor of Midwifery and the Diseases of Women and Children.

The following table exhibits the number of students who have attended the lectures in this institution, and the number of graduates in each year, from the winter of 1810-11 to that of 1835-6, inclusive.

Winter.	Matriculates.	Graduates.	Winter.	Matriculates.	Graduates.
1810-11	.. 406	.. 65	1823-24	.. 424	.. 96
1811-12	.. 387	.. 70	1824-25	.. 487	.. 111
1812-13	.. 349	.. 61	1825-26	.. 440	.. 114
1813-14	.. 345	.. 62	1826-27	.. 441	.. 131
1814-15	.. 319	.. 44	1827-28	.. 409	.. 133
1815-16	.. 388	.. 70	1828-29	.. 362	.. 109
1816-17	.. 436	.. 74	1829-30	.. 421	.. 127
1817-18	.. 465	.. 87	1830-31	.. 410	.. 151
1818-19	.. 422	.. 102	1831-32	.. 386	.. 134
1819-20	.. 330	.. 78	1832-33	.. 367	.. 117
1820-21	.. 325	.. 66	1833-34	.. 432	.. 145
1821-22	.. 357	.. 77	1834-35	.. 390	.. 135
1822-23	.. 455	.. 101	1835-36	.. 398	.. 132

In the twenty-six years, the number of students has consequently amounted to 10,331, and of graduates to 2592; the average number per annum of the former being 398, and of the latter 100. The great increase of the graduates over the matriculates since the year 1810 is ascribed by the faculty, in a printed address by Professor Wood, recently published by their direction, to two chief causes: first, the establishment of other schools, the pupils of which are permitted to become candidates for a degree in the university of Pennsylvania, after attending one full course of lectures, instead of two courses in the latter; and, secondly, the greater diffusion of knowledge through the community, which renders a degree desirable as an evidence of qualification to practise, where formerly it was deemed of little consequence.

## II. COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK. (NEW YORK.)

This was the second medical school instituted in America, in the year 1768. Drs. Clossy, Bard, Jones, Middleton, Smith, and John V. B. Tennent were the first professors. The school was connected with King's, now Columbia College, and, in 1769, the degree of bachelor of medicine was conferred upon Samuel Kissam and Robert Tucker, the first graduates. The school had been in existence but a few years, when its labours were interrupted by the revolutionary war. On the return of peace various attempts were made to revive it, but, owing to feuds and collisions among the members of the profession, every effort was vain. Private lectures were, however, delivered by many respectable teachers; until, in 1792, a new organization of a medical school was effected by the trustees of Columbia College, but the advantages accruing from it were deemed by no means commensurate with their expectations; and, accordingly, it was deemed expedient to grant a charter, establishing the College of Physicians and Surgeons, in March, 1807. A spirit of rivalry now commenced between the schools, which led to the most unfortunate results; so that, in 1811, the regents were induced to remodel the College of Physicians and Surgeons, with a view to their union with the Medical Faculty of Columbia College, which was effected in 1813. For about seven years from this period the College of Physicians and Surgeons went on prosperously; but difficulties arose; charges of serious import were brought against the professors, men undoubtedly of talent and respectability: these charges (to use the language of a medical historian of the times,) on investigation by the regents, in March, 1825, were declared to be unsubstantiated, and were pronounced by that body, in an elaborate report, to have arisen from jealousy and professional rivalry. "Broils and contention, nevertheless, continued, and the opposition persisted systematically in their



purpose. In April, 1826, the professors, wearied with unavailing attempts to silence the opposition, came to the conclusion that 'it would best consist with their own self-respect' to withdraw altogether from the institution; and accordingly they tendered the resignation of their professorships and offices. The Board of Regents accepted their resignations, April 17, 1826, and presented their thanks 'for the faithful and able manner in which they had filled their respective chairs as instructors and lecturers in the said college.' "

The professors at that time were Drs. Hosack, Macneven, Samuel L. Mitchell, Mott, and Francis; Dr. Post having previously given in his resignation. Through the agency of these gentlemen, an offshoot from Rutgers College, at New Brunswick, in New Jersey, was established in New York; but, although the number of students frequenting its halls was considerable, it was necessarily abandoned, owing to the legislature of New York refusing it a charter.

The present faculty are as follows:

1. John Augustine Smith, M.D., Professor of Physiology.
2. Alexander H. Stevens, M.D., Professor of the Principles and Practice of Surgery.
3. Joseph M. Smith, M.D., Professor of the Theory and Practice of Physic and Clinical Medicine.
4. Edward Delafield, M.D., Professor of Obstetrics and Diseases of Women and Children.
5. John B. Beck, M.D., Prof. of Materia Medica and Medical Jurisprudence.
6. John Torrey, M.D., Professor of Chemistry and Botany.
7. Valentine Mott, M.D., Professor of Operative Surgery, and Surgical and Pathological Anatomy.
8. John R. Rhinelander, M.D., Professor of Anatomy.

James Quackenbush and James Bolton, Demonstrators.

The number of students, in the session 1835-6, was 124; the number of graduates, session 1834-5, was nineteen.

### III. MEDICAL SCHOOL OF HARVARD. (BOSTON.)

This school was first suggested by private munificence. Dr. Ezekiel Hersey, of Hingham, in Massachusetts, who died in 1770, bequeathed one thousand pounds, and his widow, at her decease, a like sum, to be applied to the establishment of a professorship of anatomy and surgery. His brother, Dr. Abner Hersey, of Barnstable, who died in 1786, and Dr. John Cuming, of Concord, also gave five hundred pounds each, for the same object; and William Erving, Esq., of Boston, bequeathed one thousand pounds towards the endowment of an additional professorship. In 1780, Dr. John Warren, the father of the present professor of anatomy, whilst surgeon of a military hospital in Boston, commenced a course of anatomical lectures, which were attended, in the following year, by the students of the university. Dr. Warren furnished a plan for a medical school, which was adopted, in 1782, by the corporation of Harvard College. He was appointed professor of anatomy and surgery; Dr. Benjamin Waterhouse, professor of the theory and practice of physic; and Dr. Aaron Dexter, professor of chemistry. In consequence of the greater advantages likely to accrue from the lectures being delivered in the city of Boston, the corporation and board of overseers of Harvard University deemed it expedient to remove the medical school to that city, which was done in 1810.

The present faculty are:

1. John C. Warren, M.D., Professor of Anatomy and the Operations of Surgery.
2. John W. Webster, M.D., Professor of Chemistry.
3. Walter Channing, M.D., Professor of Midwifery and Medical Jurisprudence.
4. Jacob Bigelow, M.D., Professor of Materia Medica.
5. George Hayward, M.D., Professor of the Principles of Surgery and Clinical Surgery.

9. James Jackson, M.D.,\* and John Ware, M.D., Professors of the Theory and Practice of Physic and Clinical Medicine.

The number of students, session 1835-6, was 118.

#### IV. DARTMOUTH COLLEGE, NEW HAMPSHIRE. (HANOVER.)

This was the fourth medical school instituted in the United States. It is situated at Hanover, New Hampshire, and was founded by Dr. Nathan Smith, the father of the present professor of surgery in the university of Maryland. In 1798, Dr. Smith was appointed sole professor of the school, and for twelve years he gave lectures on the various departments of medicine, excepting two courses, in which he was assisted in the department of chemistry.

The present faculty are three in number:

1. Reuben Dimond Mussey, M.D., Professor of Anatomy, Surgery, and Obstetrics.
2. Daniel Oliver, M.D., Professor of Physiology, Theory and Practice of Physic, Materia Medica, and Intellectual Philosophy.
3. Rev. Benjamin Hale, M.A., Professor of Chemistry, and Lecturer on Geology and Mineralogy.

Two of the professors teach in the academical as well as in the medical department; the medical course occupying but fourteen weeks, whilst the academical embraces the year, with the exception of the vacations.

The number of medical students at this college, during the session of 1834-5, was 106; number of graduates, twenty-eight.

#### V. UNIVERSITY OF MARYLAND. (BALTIMORE.)

This school is considered to owe its origin mainly to Dr. John B. Davidge, who, in the year 1804, commenced a course of lectures, in Baltimore, on midwifery, to a class of six students. The year following, he lectured also on anatomy and surgery, to a class of seven students; and, in 1806, to a class of nine. In 1807, Dr. Cooke, of Virginia, and Dr. Shaw, of Maryland, united with Dr. Davidge to form a medical school in Baltimore, and lectures were given on the different branches of medicine. The same year, they petitioned the legislature of Maryland for a charter, which was granted, and the school became regularly organized, by the title of the "College of Medicine of Maryland." In the sixteenth section of the charter it was enacted "that, until further arrangements be made by the regents of the said college, John B. Davidge, M.D., and James Cocke, M.D. shall be joint professors of anatomy, surgery, and physiology; George Brown, M.D. professor of the practice and theory of medicine; John Shaw, M.D., professor of chemistry; Thomas E. Bond, M.D., professor of materia medica; and William Donaldson, M.D., professor of the institutes of medicine. Two of these gentlemen, whose solicitude for the interests of science led them to give their influence for the creation of a medical school in Maryland, had no desire to engage in the duties of teaching, and the ill health of another required him to retire to a country residence; so that, in the year 1809, the professors were Davidge, Cooke, Potter, De Butts, and Baker. In 1810, the legislature enlarged the college to a university, by authorizing the formation of three other colleges, and ordered that the four colleges be styled the "University of Maryland."

The faculty at present consists of six professors, in the following order of appointment:

1. Nathaniel Potter, M.D., Professor of Pathology and the Theory and Practice of Physic.
2. Richard Wilmot Hall, M.D., Professor of Midwifery, and the Diseases of Women and Children.
3. Nathan R. Smith, M.D., Professor of the Principles and Practice of Surgery.

\* Dr. Jackson has very recently resigned, and his place has not yet been supplied.

4. Julius T. Ducatel, M.D., Professor of Chemistry and Pharmacy.
  5. Eli Geddings, M.D., Professor of Anatomy and Physiology.
  6. Robley Dunglison, M.D., Professor of Therapeutics, *Materia Medica*, Hygiene, and Medical Jurisprudence.\*
  - H. Willis Baxley, M.D., Dissector and Demonstrator of Anatomy.
- The number of matriculates, session 1835-6, was 120; and of graduates, 46.

**VI. COLLEGE OF PHYSICIANS AND SURGEONS OF THE WESTERN DISTRICT OF THE STATE OF NEW YORK. (FAIRFIELD.)**

In the year 1812, this college was instituted by the regents of the University of the State of New York, and placed under the direction of a board of trustees. In the year following, the school was organized by the trustees, with five professorships. The present professors are:

1. W. Willoughby, M.D., President, and Emeritus Professor of Obstetrics.
  2. James Hadley, M.D., Professor of Chemistry.
  3. James McNaughton, M.D., Professor of Anatomy and Physiology.
  4. Theodoric Romeyn Beck, M.D., Professor of *Materia Medica* and Medical Jurisprudence.
  5. John Delamater, M.D., Professor of the Theory and Practice of Physic.
  6. Rueben D. Mussey, M.D., Professor of Surgery and Obstetrics.
- The number of students, session 1834-5, was 217.  
The college is in Herkimer county, seventy-six miles W.N.W. from Albany.

**VII. YALE COLLEGE, CONNECTICUT. (NEW HAVEN.)**

The medical school of Yale College was incorporated by the legislature in the year 1810, and established at New Haven, Connecticut. The lectures did not commence until 1813.

The following gentlemen constitute the present faculty:

1. Thomas Hubbard, M.D., Professor of the Principles and Practice of Surgery.
  2. Eli Ives, M.D., Professor of the Theory and Practice of Medicine.
  3. B. Silliman, M.D., Professor of Chemistry and Pharmacy.
  4. William Tully, M.D., Professor of *Materia Medica* and Therapeutics.
  5. J. Knight, M.D., Professor of Anatomy and Physiology.
  6. Timothy P. Beers, M.D., Professor of Obstetrics.
- The number of students, session 1834-5, was 64; number of graduates, 17.

**VIII. TRANSYLVANIA UNIVERSITY. (LEXINGTON.)**

The medical department of this university was instituted at Lexington, Kentucky, in 1817, and commenced its operations in November of that year. Its rise has been most rapid, and it is now next to the Philadelphia school in point of numbers. The following is the list of students and graduates since its commencement:

Session.	Students.	Graduates.	Session.	Students.	Graduates.
1819-20 ..	37 ..	7	1829-30 ..	199 ..	81
1820-21 ..	93 ..	13	1830-31 ..	210 ..	52
1821-22 ..	138 ..	37	1831-32 ..	215 ..	74
1822-23 ..	171 ..	51	1832-33 ..	222 ..	69
1823-24 ..	200 ..	47	1833-34 ..	262 ..	66
1824-25 ..	234 ..	57	1834-35 ..	259 ..	83
1825-26 ..	281 ..	65	1835-36 ..	261 ..	75
1826-27 ..	190 ..	53			
1827-28 ..	152 ..	58		3,330	923
1828-29 ..	206 ..	40			

\* This chair has been recently vacated by the appointment of Professor Dunglison to the chair of "Institutes of Medicine and Medical Jurisprudence," in the Jefferson Medical College.

*Present Faculty:*

1. Benjamin Winslow Dudley, M.D., Professor of Anatomy and Surgery.
2. Charles Caldwell, M.D., Professor of the Institutes and Clinical Practice, and of Medical Jurisprudence.
3. John Esten Cooke, M.D., Professor of the Theory and Practice of Medicine.
4. William Hall Richardson, M.D., Professor of Obstetrics and the Diseases of Women and Children.
5. Charles Wilkins Short, M.D., Professor of Materia Medica and Medical Botany.
6. Lansford Pitts Yardell, M.D., Professor of Chemistry and Pharmacy.
- Robert Peter, M.D., assistant Professor of Chemistry.

## IX. MEDICAL COLLEGE OF OHIO. (CINCINNATI.)

This college was established at Cincinnati in 1818; but it has experienced many changes, and the lectures were suspended for a session. A new charter was, however, obtained from the legislature; since which time the number attending the school has, with the exception of one or two years, progressively increased. During the last year a new school was established in Cincinnati, through the agency of some who were previously prominent professors in the Medical College of Ohio. The present professors are:

1. Jedediah Cobb, M.D. . . . Anatomy and Physiology.
2. John Locke, M.D. . . . Chemistry and Pharmacy.
3. Alban G. Smith, M.D. . . . Surgery.
4. James C. Cross, M.D. . . . Materia Medica.
5. John Moorhead, M.D. . . . Obstetrics, and the Diseases of Women and Children.
6. John Eberle, M.D. . . . Theory and Practice of Medicine.
7. John T. Shotwell, A.B. M.D. Adjunct Professor of Anatomy.

Number of students during the session of 1835-6, about 125.

## X. VERMONT ACADEMY OF MEDICINE. (CASTLETON.)

This institution was established at Castleton, Vermont, under the charter of Middleburg College, in 1818.

The number of students, session 1834-5, was sixty-two.

## XI. MEDICAL SCHOOL OF MAINE. (BRUNSWICK.)

This school was established, in the year 1820, at Brunswick, under the charter of Bowdoin College. The following is the list of professors:

1. Jedediah Cobb, M.D., Professor of Anatomy and Surgery.
2. William Perry, M.D., Professor of the Theory and Practice of Physic.
3. James McKeen, M.D., Professor of Obstetrics and Medical Jurisprudence.
4. Parker Cleaveland, M.D., Professor of Chemistry and Materia Medica.

The number of students, during the session of 1834-5, was eighty-six.

## XII. BERKSHIRE MEDICAL INSTITUTION. (PITTSFIELD.)

This institution was established at Pittsfield, Massachusetts, in 1822, under the charter of Williams College, situated at Williamstown, in that state.

The following professors constitute the faculty:

1. H. H. Childs, M.D., Professor of the Theory and Practice of Medicine and Obstetrics.
2. E. Bartlett, M.D., Professor of Pathological Anatomy and Materia Medica.
3. C. Dewey, M.D., Professor of Botany, Chemistry, and Natural Philosophy.
4. W. Parker, M.D., Professor of Anatomy, Surgery, and Physiology. (?)
5. John Frissell, A.M., Demonstrator of Anatomy.

The number of students in attendance during the session of 1835-6, was one hundred. Number of graduates, session 1834-5, twenty-seven.

**XIII. MEDICAL COLLEGE OF SOUTH CAROLINA. (CHARLESTON.)**

In the year 1824, the Medical College of South Carolina was established at Charleston. This school proceeded in prosperity until within the last few years, when dissensions arose between the trustees and the faculty: the latter resigned their chairs, and having obtained, in 1832, a charter from the state, commenced a new school, the "Medical College of the State of South Carolina." Since the secession of the old professors, several changes have been made. The following professors constitute the present faculty of the college:

1. William Hume, M.D., Professor of Anatomy.
2. E. Harry Deas, M.D., Professor of Surgery.
3. Thos. Y. Simons, M.D., Professor of the Theory and Practice of Medicine.
4. Francis Y. Porcher, M.D., Professor of Obstetrics and Diseases of Women and Children.
5. Henry Alexander, M.D., Professor of Materia Medica.
6. Charles Davis, M.D., Professor of Chemistry.

The number of students in attendance during the session of 1834-5, is stated to have been eighteen.

**XIV. JEFFERSON COLLEGE, PHILADELPHIA. (CANONSBURG.)**

The medical school of Jefferson College, which is seated at Canonsburg, in the western part of Pennsylvania, was established at Philadelphia, in the year 1824. Within the last four years the rise of this institution has been unexampled. In the session of 1832-3, there were only ninety-six students; in 1833-4, 172; in 1834-5, 233; and, in 1835-6, 364. In the first of these years, the number of graduates was nineteen; in the last, 134.

The following is the list of professors:

1. Granville Sharp Pattison, M.D., Professor of Anatomy.
2. George McClellan, M.D., Professor of Surgery.
3. John Revere, M.D., Professor of the Principles and Practice of Physic.
4. Samuel Colhoun, M.D., Professor of Materia Medica and Pharmacy.
5. Jacob Green, M.D., Professor of Chemistry.
6. Samuel McClellan, M.D., Professor of Midwifery and the Diseases of Women and Children.\*

**XV. UNIVERSITY OF VIRGINIA. (CHARLOTTESVILLE.)**

When this school was first established, but one medical professor was appointed, to whom every branch of medicine was assigned, except chemistry. The author of this sketch was sole professor from 1825, the year in which the lectures were first delivered, until the session of 1827-8; when, on his proposition, the visitors assigned the departments of practical anatomy and surgery to a demonstrator, and that of materia medica (with his approbation) to the professor of chemistry. Unlike the mass of medical schools, the session of the medical department of the University of Virginia is of the same length as the academic session, ten months. The following gentlemen compose the faculty:

1. John P. Emmet, M.D., Professor of Chemistry and Materia Medica.
2. Alfred T. Magill, M.D., Professor of the Theory and Practice of Medicine, Obstetrics, and Medical Jurisprudence.
3. Augustus L. Warner, M.D., Professor of Anatomy, Physiology, and Surgery.

The number of students in attendance during the session of 1835-6, was sixty-three.

**XVI. WASHINGTON MEDICAL COLLEGE. (BALTIMORE.)**

This institution, which is an offshoot of the Washington College, Washington, Pennsylvania, after a career of six years' duration, obtained, in 1833-4, an act

\* A new chair has recently been added to this school, "Institutes of Medicine and Medical Jurisprudence," to which Professor Dunglison has been appointed.

of incorporation from the state of Maryland, empowering the authorities of the college to confer degrees in medicine.

The present faculty are:

1. James H. Miller, M.D., Professor of Anatomy, Physiology, and Pathology.
2. Samuel H. Jennings, M.D., Professor of Materia Medica, Therapeutics, Hygiène, and Medical Jurisprudence.
3. William H. Handy, M.D., Professor of Obstetrics and the Diseases of Women and Children.
4. John C. S. Monkur, M.D., Professor of the Theory and Practice of Medicine.
5. John P. Mettauer, M.D., Professor of Surgery and Surgical Anatomy.
6. Edward Foreman, M.D., Lecturer on Chemistry.

Washington R. Handy, M.D., Demonstrator of Anatomy.

The number of students in attendance during the last session was about twenty.

#### XVII. MEDICAL COLLEGE OF GEORGIA. (AUGUSTA.)

In the year 1828, a medical institution was commenced at Augusta, Georgia, under the name of the "Medical Academy," by Dr. Antony. As this did not succeed, or at least was not encouraged by a reciprocity of favours from the other medical establishments of the country, the charter was extended by the legislature of Georgia, in the session of 1829-30, so as to enable the college to grant degrees, under the same regulations as other medical colleges. The first course of lectures was delivered in the winter of 1832-3.

##### *Present Faculty:*

1. Alexander Cunningham, M.D., Professor of the Theory and Practice of Medicine.
2. Paul F. Eve, M.D., Professor of Surgery.
3. A. Dugas, M.D., Professor of Anatomy.
4. Joseph Eve, M.D., Professor of Materia Medica.
5. Milton Antony, M.D., Professor of Obstetrics, &c.
6. Lewis Ford, M.D., Professor of Chemistry.

#### XVIII. MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA. (CHARLESTON.)

In consequence of difficulties originating between the Faculty of the Medical College of South Carolina, (No. XIII.) and the Medical Society of the State, the governing body, in the year 1832, the former resigned their professorships, and obtained from the legislature a charter for a college under the above title. This was organized in 1833.

##### *Present Professors.*

1. G. Edwards Holbrook, M.D., Professor of Anatomy.
2. John Wagner, M.D., Professor of Surgery.
3. S. Henry Dickson, M.D., Professor of the Institutes and Practice of Medicine.
4. Henry R. Frost, M.D., Professor of Materia Medica.
5. G. A. Shepard, M.D., Professor of Chemistry.
6. Thomas G. Prioleau, M.D., Professor of Obstetrics, &c.
7. James Moultrie, M.D., Professor of Physiology.
8. John Bellinger, M.D., Demonstrator of Anatomy.

The number of students in attendance in 1835-6, was 129; number of graduates, session 1834-5, 38.

#### XIX. MEDICAL COLLEGE OF LOUISIANA. (NEW ORLEANS.)

This school was instituted in the autumn of 1834, in New Orleans, with the above title, and it has since been endowed by the state legislature with corporate privileges.

The following professors compose the faculty:

1. Charles A. Lazenberg, M.D., Professor of the Principles and Practice of Surgery.
2. Edward H. Barton, M.D., Professor of the Theory and Practice of Medicine and Clinical Practice.
3. W. Byrd Powell, M.D., Professor of Chemistry and Pharmacy.
4. J. Harrison, M.D., Professor of Physiology and Pathology.
5. J. Monroe Mackie, M.D., Professor of Materia Medica, Therapeutics, and Medical Jurisprudence.
6. Thomas R. Ingalls, M.D., Professor of Obstetrics, and Diseases of Women and Children.
7. C. A. Luzenberg, M.D., Professor of Anatomy, (*ad interim*).

#### XX. MEDICAL INSTITUTION OF GENEVA COLLEGE, NEW YORK. (NEW YORK.)

The trustees of Geneva College, at Geneva, on the Seneca Lake, have established a Medical department; the number of students at which, during the last session, was sixty-eight; and of graduates, six.

##### *Present Professors.*

1. E. Cutbush, M.D., Professor of Chemistry.
2. Thomas Spencer, M.D., Professor of the Institutes and Practice of Medicine.
3. W. Parker, M.D., Professor of Anatomy and Physiology.
4. John George Morgan, M.D., Professor of the Principles and Practice of Surgery.
5. Charles B. Coventry, M.D., Professor of Obstetrics and Materia Medica.
6. A. Coleman, M.D., Professor of Medical Jurisprudence and Botany.

#### XXI. MEDICAL DEPARTMENT OF CINCINNATI COLLEGE. (CINCINNATI.)

The medical department of this college was instituted last year, under the following professors.

1. Joseph A. McDowell, M.D., Professor of Special and Surgical Anatomy.
  2. Samuel D. Gross, M.D., Professor of General and Pathological Anatomy, Physiology, and Medical Jurisprudence.
  3. William Parker, M.D., Professor of Surgery.
  4. Landon C. Reeves, M.D., Professor of Obstetrics, and the Diseases peculiar to Women and Children.
  5. James B. Rogers, M.D., Professor of Chemistry and Pharmacy.
  6. John P. Harrison, M.D., Professor of Materia Medica.
  7. Daniel Drake, M.D., Professor of the Theory and Practice of Medicine.
- John L. Reddel, M.A., Adjunct Professor of Chemistry and Lecturer on Botany.
- The number of students in attendance during the course was sixty-six.

#### XXII. SCHOOL OF MEDICINE AT WOODSTOCK, VERMONT. (WOODSTOCK.)

This school was incorporated by the legislature of Vermont, in October, 1835, with the power of conferring degrees. It is connected, like the Vermont Academy of Medicine (No. x.) with Middleburg College.

##### *Present Faculty.*

1. H. H. Childs, M.D., Professor of the Theory and Practice of Medicine, and Obstetrics.
  2. William Parker, M.D., Professor of Physiology and Surgery (?)
  3. David Palmer, M.D., Professor of Chemistry and Materia Medica.
  4. Robert Watts, jun., M.D., Professor of Anatomy.
  5. Norman Williams, A.M., Professor of Medical Jurisprudence.
- Otes Perham, Demonstrator of Anatomy.

#### XXIII. WILLOUGHBY UNIVERSITY, LAKE ERIE. (WILLOUGHBY.)

The medical department of this university was founded a short time ago. We know not the names of the professors; but, according to the *Western Journal of the Medical and Physical Sciences*, (for April, 1836,) it has five. The cat-

logue for 1835-6, presents the names of twenty-three students; and of five graduates.

There are, consequently, in the United States, not fewer than twenty-three colleges capable of conferring medical degrees, and these are attended during the session by not fewer than 2,500 students; of whom, at least five or six hundred may receive degrees. This may seem an inordinate supply, but it must be borne in mind that the division of the profession is not the same in the United States as in England. The apothecary of the United States corresponds to the *Pharmacien* of France; he neither visits the sick, nor prescribes at the counter. Every Candidate, too, for graduation, is compelled to exhibit his qualifications for practising both medicine and surgery; for, although some may devote themselves more especially to the latter branch, their medical education does not differ from that of the practitioner who confines himself to medicine. They are all educated, in other words, for the general exercise of the duties of their profession.

All the Institutions are organized upon the same general plan, although they may differ in the number of professorships, and in the facilities which they afford for the study of the more practical parts of the profession. In the largest schools of the country, it is expected that the candidate for graduation shall have studied medicine three full years, and it is required that he shall have attended two courses of public lectures on all the branches of the profession at a regularly organized Medical Institution. He is then subjected to a private examination before the Medical Faculty; and, in most of the schools, has to defend, in their presence, an acceptable dissertation on some medical topic. In most of the colleges, too, the candidate must be twenty-one years of age, and of good moral character; and in some he is required to possess an acquaintance with natural philosophy and a knowledge of the principles and construction of the Latin language. In all cases the examinations are in English; and in one school,—the University of Virginia,—the diploma is in that language, and of the simplest construction.

Attached to most of the schools, in the cities more especially, are valuable hospitals, or dispensaries, in which the student has full opportunity for investigating the nature of disease, and the approved methods of management, and for witnessing surgical operations. A year's attendance upon the clinics of an institution of this kind is properly required by most of the schools; and by some the same length of attendance on practical anatomy, in addition to the two courses delivered by the professor of anatomy, is held to be indispensable.

In the University of Virginia, the session of which, as was before remarked, is of ten months' duration, time has been altogether discarded in the estimate of the student's qualifications for a degree, and he is permitted to present himself for examination at the prescribed period of the session, during the first year of his collegiate attendance, if he thinks proper.

The fees for attendance on lectures vary greatly in the different schools. In the oldest institution in the country, the University of Pennsylvania, they amount to 120 dollars (27*l.*) for the course, whilst there are schools in which they do not amount to more than fifty-five dollars, (12*l.*) The fee for the Diploma likewise varies, from forty dollars (University of Pennsylvania,) to five dollars (University of Virginia). In the latter institution, it was thought that the student should be entitled to his certificate of proficiency, or diploma, when he afforded the faculty satisfactory evidences thereof; and, accordingly, a small sum was affixed to the document, with the view merely of covering the expenses of parchment, &c.

The mode of teaching is precisely that adopted in the medical institutions of Europe, by lectures, aided (where the subject admits of it,) by demonstrations; for which extensive museums, cabinets of apparatus, &c. afford ample facilities.

The session of the purely Medical Schools generally commences about the first of November, and terminates on the last day of February. The anatomical



rooms are sometimes opened earlier. This is the case with the Jefferson College, of Philadelphia, at which lectures are also delivered during the month of October.

*Table of the Dates at which the Lectures commence in the different Institutions for Medical Instruction in the United States.*

1. University of Pennsylvania . . .	at Philadelphia, .	First Monday in November.
2. College of Physicians and Surgeons, New York . . . . .	New York, .	Ditto ditto.
3. Medical School of Harvard . . .	Boston, . .	First Wednesday in Novemb.
4. Dartmouth Coll., New Hampshire . . .	Hanover, . .	Last Week in August.
5. University of Maryland . . . . .	Baltimore, .	Last Monday in October.
6. College of Physicians and Surgeons of the Western District of the State of New York . . .	Fairfield, .	First Tuesday in October.
7. Yale College, Connecticut . . . . .	New Haven, .	Last week in October.
8. Medical College of Ohio . . . . .	Cincinnati, .	Last Monday in October.
9. Vermont Academy of Medicine . .	Castleton, .	Second Thursday in August, and a spring term beginning on the second Thursday in March. Each session of fourteen weeks.
10. Transylvania University . . . . .	Lexington, .	First Monday in November.
11. Medical School of Maine . . . . .	Brunswick, .	Latter end of February.
12. Berkshire Medical Institution, Massachusetts . . . . .	Pittsfield, .	Last Thursday in August.
13. Medical College of South Carolina . . . . .	Charleston, .	Second Monday in November.
14. Jefferson College . . . . .	Philadelphia, .	The regular series, in the first week of November.
15. University of Virginia . . . . .	Charlottesville	First of September.
16. Washington Medical College . . . . .	Baltimore, .	Last Monday in October.
17. Medical College of Georgia . . . . .	Augusta, . .	In October.
18. Medical College of the State of South Carolina . . . . .	Charleston, .	Second Monday in November.
19. Medical College of Louisiana . . . . .	New Orleans, .	First Monday in December.
20. Medical Institution of Geneva College, New York . . . . .	Geneva, . .	First Tuesday in October.
21. Cincinnati College . . . . .	Cincinnati, .	Last Monday in October.
22. School of Medicine at Woodstock, Vermont . . . . .	Woodstock, .	Second Thursday in March.
23. Willoughby University . . . . .	Willoughby, .	Beginning of November.
	Lake Erie, .	

*Baltimore; June 10th, 1836.*

R. D.

MEETING OF THE BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.  
*Held at Bristol, in August, 1836.*

MEDICAL SECTION.

*President, Dr. Roget:*

*Vice Presidents, Dr. Bright, Dr. Macartney;  
Secretaries, Dr. Symonds, G. D. Fripp, Esq.*

ABSTRACT OF THE PROCEEDINGS OF THE MEDICAL SECTION.

THE proceedings of the Section were opened on Monday, the 22d of August, by an address from its President, Dr. Roget, on the general objects of the Association, and those of the Medical Section in particular. Those objects he stated to be the collection and concentration of information, and its subsequent diffusion, after having been carefully sifted and having received the stamp of the Association.

1. The Report of the Dublin Committee appointed to investigate the Pathology of the Brain and Nervous System was produced by Dr. O'Beirne, who

stated that the present must be considered only as a provisional Report, as the committee had been chiefly occupied with the collection of numerous cases of injuries of the brain, and lesions of individual nerves, the particulars of which cases had been carefully registered; and they are anxious to procure a still greater number before they venture to form any general inferences.

2. Dr. O'Beirne then communicated an abstract of an unpublished work on Tetanus. He commenced with an account of the opportunities which he had enjoyed of observing this disease, which were numerous and extensive, and of the circumstances which induced him to commence and prosecute the enquiry. Dr. O'Beirne repudiates all specific divisions of the disease, except that which distinguishes the *traumatic* (or symptomatic) from the *atraumatic* (or idiopathic). He allows of no such varieties as *Trismus* and *Pleurosthotonos*, recognising only *Opisthotonos*, which is the more common form, and *Emprosthotonos*, which he agrees with authors in considering very rare. He proposed to arrange particular specimens of the disease as being *peracute*, *acute*, *subacute*, and *chronic*; and then went into a consideration of the causes, respecting which his views were in accordance with most authorities.

The extreme periods of accession of the traumatic species were, according to his experience, the fourth day and the seventeenth; he stated that it never occurred after the cicatrization had been completed, or during the existence of active inflammation in the wound, and that it never succeeded a wound which did not penetrate below the skin, to the muscles or fascia. The general character of the disease he finds to be the same in all climates, countries, and ages; but the atraumatic species supervenes much earlier than the traumatic.

He has no confidence in any reputed premonitory symptoms, and finds that in no instance is it ushered in or attended by symptoms peculiar to febrile diseases or eruptions on the skin, except quickness of pulse, which in the atraumatic species is permanent. He denies the existence of any tendency to crises or sudden disappearance, and states that recovery takes place slowly, the period varying from eighteen days to seven or eight weeks.

The only true pathognomonic sign is a *peculiar expression of the countenance*, long retained after the attack, and even after death, and not indicative of any particular mental emotion. An engraved representation of the face of a patient during and between the tetanic paroxysms was exhibited.

The symptoms of the disease in both species were minutely stated, and arranged under three stages. The only constant morbid appearances are distention of the cæcum and colon, and rigid contraction of the rectum. In the emprosthotonic variety, an extremely contracted state of the stomach is occasionally noticed.

Dr. O'Beirne lays stress upon the amount of pain in opisthotonos being much less than is generally supposed, and declares the symptoms and course to be more uniform in this than in any other malady. In his observations on the diagnosis, he remarked upon the extraordinary extent to which this disease had been confounded with others, and enumerated the spurious cases under several heads. He particularly mentioned that, if he were to find in a patient the angles of the mouth drawn either upwards or downwards, he should conclude that the case was not a true specimen of the disease.

With respect to the seat of tetanus, Dr. O'B. expressed his belief that the anterior column of the spinal cord, and probably the thalami optici and corpora striata, are the parts in the affections of which we must look for the pathology of the disease; but he considers that, in emprosthotonos, the pneumogastric nerve is also affected. The change in these parts is functional only, and not connected with inflammation or organic lesion. All the symptoms are therefore the product of muscular action, dependent upon an accumulation or increased intensity of the *motific principle*, residing in the anterior spinal column.

The remedial measure on which Dr. O'B. places most reliance is the use of tobacco enemata, thrown into the colon by means of a flexible tube introduced

through the rectum. This method is detailed in his work on Defecation, which he stated to have been the offspring of his researches upon tetanus. He presented a list of twenty cases, eleven of which recovered; and concluded his paper by adverting to the disease as it occurs in the horse, in the treatment of which, his method, in the hands of veterinary surgeons, had been attended with success.

A discussion then ensued, in which Dr. Yelloly, Dr. Reid, Dr. Wallis, Mr. Bracy Clark, Dr. Fowler, Mr. King, Mr. Hetling, Dr. Symonds, Mr. Greeves, Dr. Howell, Mr. Carmichael, and Mr. Broughton, severally took a part. To us it appeared that the difference between Dr. O'Beirne and those who opposed his views was principally one of words, depending upon the restricted or extended sense in which the term tetanus was respectively employed by them.

3. A case of Aneurism of the Arteria Innominata and Thoracic Aorta, communicated by Sir David Dickson, was read by Dr. Symonds. This paper was accompanied by a drawing representing the diseased parts.

TUESDAY.—1. The first paper read was entitled "Observations on Remedies for Diseases of the Brain," by Dr. Prichard.

The principal object of this paper was to recommend the employment of a peculiar mode of counter-irritation in all those forms of cerebral disease which are accompanied by coma, stupor, or diminished sensibility, excluding those which are attended with excitement. This method consists in the formation of a *long issue*, better made by the scalpel than by an escharotic, in the direction of the sagittal suture. The details of a case of complete amaurosis unsuccessfully combated by the antiphlogistic and mercurial treatment, but in which sight began to return immediately upon the establishment of suppuration in an issue of this description, were given; and the patient, to whom his sight has been perfectly restored, was submitted to the examination of the Section.

2. A communication was then read by Dr. Houston, of Dublin, on a Human Fœtus without Heart or Lungs. The case was one of twins, between the seventh and eighth months. The placentæ were intimately united, but the line of their junction was distinct. Each fœtus had its own membranes and umbilical cord, the latter being inserted into the placenta at some distance from each other. The imperfect fœtus was acephalous, as in other instances of the kind, but was alive at the time of birth; there was no subdivision of chest and abdomen; the spinal canal began at the sixth cervical vertebra; there was no heart, lungs, liver, or stomach; the lower intestines contained meconium; the kidneys existed, but only one ureter; and there was general œdema of the whole body. The state of the circulating apparatus had been carefully examined by Dr. H., and appeared to him to lead to some important conclusions. The cord was short, and the umbilical vein, which was nearly straight, communicated with the right hypogastric, which joined the vena cava in the usual manner. From this vessel branches proceeded throughout the system, *all of which were totally devoid of valves*. The arterial system arising from the aorta was in like manner distributed through the body, but had nowhere any communication with the venous system, except by the capillaries; so that, by whatever vessels the blood entered the body, by the same it must have been distributed. A round tumour, which existed in the substance of the cord, outside the umbilicus, had produced effects on the vessels calculated to throw light on the course of the circulation; the vein was varicose from the tumour as far as the placenta, and the arteries were dilated on the side next the body of the fœtus.

Dr. Houston then adverted to the researches of various anatomists on the circulation of the acardiac fœtus, and especially to those of Sir A. Cooper, who maintains, from the examination of a recent case, that the umbilical vessels of two fœtuses anastomose freely in the placenta, and that the circulation in the imperfect embryo is carried on by the action of the heart of its companion in utero. If this view be correct, the heart of the perfect fœtus ought to be nearly double its usual size, or the child itself small,—neither of which is the case; the

umbilical artery of the imperfect fœtus would then serve the purpose of the vein in carrying the blood from the placenta, which in this case it did not appear to have done; and a large quantity of the blood would be continually circulating without the renovating influence of the placenta. The presence of a second placenta, however imperfect or however connected with the other, is incompatible with the direct transmission of blood from the perfect to the imperfect fœtus, and with the idea that the latter is a mere offset from the former. The effects produced by the tumour on the vessels of the cord, and the absence of valves in the veins throughout the body, were adduced by Dr. Houston as strong evidence in favour of his opinion that the circulation of the *cord* of the monster was regular, but that in its *body* the functions of the arteries and veins had been inverted. He considers that the presence of an anastomosis between the cords should lead rather to the inference that the blood traverses both placentæ in the same course, than that it takes a direction in the one different from that which it follows in the other. Dr. H. suggested several good reasons in support of his opinion that the heart of the perfect fœtus can exert little influence upon the vessels of the other; and expressed his opinion that we must look to some other cause than *vis à tergo* for the accomplishment of this object. The theory of "vital attractions and repulsions," though conveyed in terms which may be considered rather as expressive of the facts than as explanatory of them, probably approaches nearer to the truth than any other which has yet been broached. With respect to the influence which the action of the vessels themselves has upon the circulation, Dr. Houston mentioned a case in which injection passed very freely through the vessels of a mortified limb, which were entirely free from coagulum or other obstruction; but the blood had not passed through them during life, though the action of the heart was unimpaired.

Dr. Prichard and Dr. Carson objected to the inference drawn by Dr. Houston from the latter case. Dr. Macartney stated that he had more than once endeavoured to inject a gangrenous limb immediately after its removal, but had been unsuccessful.

Mr. Carpenter pointed out the very striking analogies which are presented by the circulation in vegetables, all of which favour the view that the motion of fluids in vessels is in a great degree independent of a central organ of impulsion, and is closely connected with the changes which take place in the capillary vessels. He also alluded to the fact that there was no case on record in which an acardiac fœtus existed without a perfect fœtus.

Dr. Houston remarked on the latter point, that he was strongly disposed to believe that the partial union of the placentæ was the cause of the monstrosity.

3. The next paper read was on Tubercle, by Mr. Carmichael, of Dublin.

Mr. Carmichael commenced with some remarks upon the great prevalence of these formations, and then proceeded to detail their appearances according to the descriptions of Laennec and Carswell. He alluded to the use of the term Scrofula, which he considers a cloak for ignorance, and having stated that Drs. Todd, Clark, and Carswell, believe in the identity of Scrofula and Tubercle, disputed this position, and likewise their opinion that tubercles are inorganic deposits. Among other objections, he urged the inconsistency of representing enlarged cervical glands and pulmonary tubercles as identical, since it is well known that the former may be injected, but not the latter;—and of maintaining the non-inflammatory origin of tubercles, together with the view that these bodies are lifeless matter; since, if such is their nature, they must excite inflammation in the tissues which contain them. He allows, however, that the scrofulous constitution disposes to Tubercle, but only in the same manner as to Cancer. Mr. C. next adverted to the generally recognised connexion between Scrofula and disordered digestion, and claimed the priority of this observation, by reference to a work which he published in 1810. He then proceeded to argue at considerable length in favour of the parasitic origin of tubercles, pointed out the absence of vascular communication between these

bodies and surrounding parts, and observed that so long as the former retain their vitality, no inflammation takes place.

The author declared his opinion that Carcinoma must likewise be arranged among the Entozoa, and having indicated the division of a cancerous formation into a medullary and cartilaginous portion,—assigned to the former an independent vitality, the latter being only a barrier which nature sets up against the parasite,—and shewed that the containing cyst belongs to the surrounding tissue. The cartilaginous portion, he stated, might be injected, but not the medullary. Tubercles he considers more allied to Carcinoma than to Scrofula. Having spoken of a difference between Fungus Medullaris and Fungus Hematodes, he proposed to arrange the formations which had passed under review as constituting four species of Entozoa. 1. Tubercles found in the lungs. 2. Tubercles found in the abdominal organs. 3. Fungus Medullaris and Hematodes. 4. Cancer.

Mr. Carmichael next considered the exciting causes of Tubercles, and concluded his paper by urging that practitioners must direct their attention rather to the prevention than to the cure of the disease; but allowed that improvement in the general habit may possibly, at the commencement of the disease, tend to its removal.

Dr. Macartney stated several reasons for his dissent from Mr. Carmichael's doctrine of the independent vitality of Tubercle. He considers that the vesicular appearance is confined to the lungs, and is owing to the deposit taking place around the bronchial cells. He also contended, that although tubercular matter itself is not vascular, each deposit is traversed by bands of cellular tissue which may be injected, and by which it is distinguished from a hydrated vesicle. He recommended to the attention of anatomists his mode of displaying the vascularity of minute structures, by drying them on glass after having injected them.

Dr. Symonds objected to the manner in which the views of Dr. Carswell, Dr. Clark, and others, had been represented by Mr. Carmichael. They had not appeared to him to maintain the identity of Scrofula and Tubercle, but that they stood in the relation of cause and effect, or of *diathesis* and *disease*. Nor did those authors appear to him to have attributed an identical structure to tubercles in the lungs, and enlarged cervical glands; they had only shewn that tuberculous matter is deposited in the tissue of the glands, and consequently that there is no difficulty in understanding why the latter may be injected, though mere tuberculous substance in the lungs, or elsewhere, cannot. Dr. S. urged, that as the form of tubercles in the lungs depended on the parts in which they were deposited, no argument could be drawn from so accidental a character in favour of the hydatid doctrine.

WEDNESDAY.—1. Dr. Macartney read the second report of the Dublin Committee appointed to investigate the actions and sounds of the heart. In answer to the questions proposed in the resolutions of the Committee last year, they state that the contraction of the columnæ carnee occurs at the same precise moment as that of the whole mass of the ventricle, and that the valves are not *tightened* by their contraction, but by the impulse of the blood during systole, although they are drawn towards the auriculo-ventricular axis by the first-mentioned cause. The experiments instituted by them to elucidate the causes of the sounds of the heart, brought them to the same results as have been detailed in the first report; and they suggest that the future investigation of the subject should be prosecuted rather by the observation of disease than by physiological experiments.

2. The report of the London Committee upon the same subject was next read by Dr. Clendinning.

Considering that each sound of the heart might have a single cause, or be the result of a combination of causes, the Committee began their investigations by enumerating all the causes which might be supposed to be concerned; and resolved to vary their experiments so as to exclude each of them in succession.

The following is the result of their researches regarding the causes to which the first sound has been attributed:—1. *Valvular tension*. The action of the auriculo-ventricular valves may be prevented, without the sound being immediately diminished.—2. *Collision of the particles of fluid* amongst themselves and against the sides of the heart. By experiments with a caoutchouc bottle, it was proved that this cannot be one of the causes of the *normal* first sound of the heart; but it appeared probable that it might contribute to the production of the bellows sound, if any obstruction were offered to the motion of the fluid.—3. *Impulse*. This is probably an accessory, but not the principal cause of the first sound.—4. *Muscular tension*. From various experiments it appears that this is the essential cause of the first sound. If a flexible ear tube be applied over the abdominal muscles, the sound of their contraction may be distinctly heard (being probably exaggerated by the cavity beneath), and appears to be of a *systolic* character. A sudden loud sound is heard during the contraction, and continues in a less degree as long as the contraction is kept up.

As to the second sound, the period at which the columnæ carnæ contract, and the cause of the tension of the valves, their conclusions are the same as those of the Dublin Committee.

3. A letter from Dr. Spittal, of Edinburgh, to the Secretary of the Section was read, explaining the cause of no report having been furnished by the Edinburgh Committee.

4. A communication on the Mechanism of the Heart was read by Mr. Greaves, of Nottingham. The author endeavoured to show that the *external* spiral fibres of the ventricles, antagonize the *internal*, and produce active dilatation of the cavity, instead of the passive dilatation which is generally regarded as being produced by the relaxation of the muscular fibres, and the elasticity of the inter-muscular tissue. He referred the mechanical phenomena of the heart's actions to a species of gyratory movement, compensated and regulated by the double spiral curve of the two great arteries, which he regards as acting like the balance spring of a watch.

5. Dr. Roget read some observations on a singular developement of polarizing structure in the crystalline lens after death, communicated by Sir D. Brewster.

The object of the author of this paper was to institute a comparison between the changes produced by age in the polarizing structure of the crystalline lens of animals, with those changes which occur in the same organ after death, when the lens is allowed to indurate by exposure to the air, or is subjected to the continued action of an aqueous fluid, such as distilled water. With this view he examined the optical characters of the coloured luminous rings which appear in consequence of the polarizing properties acquired by the lens under these circumstances. These phenomena he conceives to afford a satisfactory explanation of the changes in the lens which terminate in cataract, a disease which seems to be more prevalent now than in former times. In a letter addressed to Dr. Roget, Sir D. Brewster gave the history of the condition of his own eye, in which he accidentally observed appearances indicating the commencement of the process described in this paper, and detailed the plan which he adopted for counteracting the progress of this affection, by which the organ was restored to its natural and healthy state.

6. Dr. Carson, of Liverpool, then read a paper on Absorption. He arrives at the conclusion that absorption is effected by three sets of vessels;—that of nutritious matter by the *Lacteals* and *Lymphatics*;—and that of matter which has become useless in the system, by the *Veins*. He imagines that the arteries and veins communicate with each other throughout the system by means of cells, like those of erectile tissue, into which the terminations of each set of vessels open; and that the nutritious particles deposited by the arteries, displace those which have become useless, and which are taken up by the open mouths of the venous capillaries; and he believes that veins do not absorb by their parietes. Dr. C. entered into an extensive consideration of the manner

in which the contents of the veins were conveyed to the heart, and of the changes which take place in the pulmonary vessels.

THURSDAY.—1. Dr. Hodgkin read a provisional Report of the Committee for investigating the connexion between Veins and Absorbents. As this report will appear in a complete form in the Transactions of the Association, we think it better not to give any abstract of it at present.

2. A communication on the Functions of Nervous Structure, was read by Dr. Reid, of Dublin. The principal object of this paper was to enforce the method of studying the nervous system under three divisions: viz. the Ganglionic, the Spinal, and the Cerebral systems. Dr. R. pointed out what he conceived to be the principal functions and province of each of these systems, and stated his opinion that all diseases should be arranged, and all remedies selected, according as the latter have their action directed to, and the former are found to affect one or other of these divisions of the nervous system in particular.

3. Mr. Broughton read a report by Dr. Marshall Hall and himself, on the Sensibility of the Glosso-Pharyngeal nerve. They had in a former report arrived at a negative result; viz. that this nerve does not endow the tongue with tactile sensibility or motion, which clearly depend on the fifth and seventh pairs. They now present their experimental researches in proof of the Glosso-Pharyngeal being the true nerve of taste, which completely accord with the observations of Panizza. Some facts in Comparative Anatomy were mentioned corroborative of their views.

4. A communication from Mr. Alcock, on some particulars in the Anatomy of the fifth pair, was read by Dr. Geogheghan.

5. Dr. Macartney presented an account of the organ of voice in the New Holland Ostrich. The peculiar *grunt-like* sound produced by the animal depends, as he has discovered, on the communication of the trachea with a large membranous cell placed under the skin of the neck; a formation peculiar to the animal, and common to both sexes.

6. Dr. Macartney next read a paper on the Pulps of the Teeth, and on Caries of these organs.

7. A communication from Dr. Montgomery, on a newly-discovered Peculiarity in the Structure of the Decidua, was then read by Dr. Geogheghan. The discovery announced in this paper was that of a number of small cuplike elevations on the uterine surface of the decidua uteri, which are found to be little bags, like the suckers of the cuttle-fish in miniature, the bottoms of which are attached to or imbedded in the substance of the decidua; they then bulge out, and terminate by a contracted neck, leaving an open mouth when the membrane is separated from the uterus. They are most numerous at a distance from the placenta, and most evident in the very early period of gestation, before the placenta is formed as a distinct organ. Dr. M. suggests, from having occasionally found them to contain a chylous fluid, whether they may not be receptacles of nutrient matter separated from the maternal blood.

8. A paper on the Functions of the Muscles and Nerves of the Eyeball was read by Mr. Walker. The action of the oblique muscles of the eyeball was explained by the author as rotating the eye inwards, but by opposite rotatory movements; so that, if the eye were rotated in one direction by the action of one of these muscles, it would be returned to its former position by the action of its antagonist; while, if both muscles were in action together, there would be no rotation at all, but a direct drawing of the eye inwards. An explanation of the reason for the complicated muscular apparatus of the eyeball is afforded, in Mr. W.'s opinion, by a reference to the arrangement of the nerves. The distribution of the 3d nerve to the superior, internal, and inferior rectus, and to the inferior oblique, points out the association of these muscles in all corresponding motions of both eyes; and the two other nerves (the 4th and 6th,) with which the two remaining muscles are supplied are required for the direc-

tion of the eye outwards, whilst the other is turned inwards, as is the case whenever an object is viewed laterally.

FRIDAY.—1. A communication was made on the Pathological Condition of the Bones in Chronic Rheumatism, by Mr. Adams, of Dublin. The various changes taking place in the extremities of the bones which constitute the joints chiefly attacked by this disease were minutely described, and illustrated by interesting specimens, casts, and drawings.

2. The Report of a Committee appointed in Dublin to pass opinion upon a case exhibited by Mr. Snow Harris to the section at the last meeting of the Association, was read by Dr. Evanson. The committee are decidedly of opinion that this interesting case was not one of fracture of the neck of the femur, as had been supposed, but an instance of the *Morbus Coxæ Senilis*.

3. Mr. Adams exhibited to the section a very splendid preparation of a case of double Popliteal Aneurism, illustrative of the changes which are produced on the circulation by the ligature of the femoral artery. In this instance the tube of the artery was continuous immediately above and below the situation where the ligature had been applied; and the anastomosing channels were very large. Mr. A. pointed out that the speedy restoration of the tube of the artery accounts for the secondary pulsation which often occurs within two or three days after the operation, until coagulation takes place in the sac. This occurrence has often caused alarm to the surgeon, but unnecessarily, since the cure of aneurism seems to depend rather upon the retardation of the current of blood than upon its total obstruction.

4. Mr. Hetling then exhibited a new instrument for the removal of ligatures from arteries. He showed that, by the use of it when the ligature is applied, the thread may be afterwards cut at any time; and that all the inconveniences arising from the protracted retention of the ligature may be thus avoided.

5. A paper by Mr. Alcock was read, disproving the opinion of some physiologists that the sense of taste is dependent on nerves from the spheno-palatine ganglion, which may be considered a confirmation of the views stated in Mr. Broughton's paper of the preceding day.

6. Dr. R. T. Thomson read a paper on the chemical states of the digestive organs in health and disease. His observations did not appear to us to have led to any novel results.

7. Mr. Gordon exhibited some portions of a very beautiful and correct anatomical model of the human body, carved in ivory, upon which he has been engaged for many years.

8. Dr. Howell communicated a case in which a large portion of the ileum had been passed per anum, the patient surviving more than twelve months; it was illustrated by some interesting drawings.

After a concluding address from Mr. Broughton, (who had taken the chair in the absence of the Presidents and Vice Presidents,) this Section adjourned.

[For the above most valuable and interesting Report we are indebted to two professional friends, who were present during the whole period of the Meeting, and had access to all the documents presented to the Section. We can therefore with confidence present it to our readers, as no less authentic than accurate.—EDS.]

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PROVINCIAL MEDICAL AND SURGICAL ASSOCIATION.

THE fifth anniversary meeting of this interesting and important Association has been held this year in Manchester. It commenced on Wednesday, July 20th, at one o'clock, when the Members of the Council assembled in the Council Room of the Royal Institution, to transact the business of the Association, and to arrange the plan of the public business for that and the succeeding day. Dr. Kidd, Professor of Medicine, &c. at the University of Oxford, was voted to the chair, and among the Members of Council present were, Dr. Hastings, of Worcester, principal Secretary of



the Association, Dr. Jeffreys and Dr. Scott, of Liverpool, Dr. Barlow, of Bath, Mr. Hebb (Mayor) of Worcester, Dr. Brown, of Sunderland, Dr. Conolly, of Warwick, Dr. Holme, of Manchester, Dr. J. L. Bardsley, of Manchester, Dr. Streeten, of Worcester, Mr. Griffiths (Mayor) of Hereford, Dr. J. Johnstone, of Birmingham, Mr. Ransome, Mr. Jordan, and Mr. Turner, of Manchester, Dr. Shaw, formerly of Manchester, Mr. Flint, of Stockport, and Mr. Crosse, of Norwich.

In the evening, at eight o'clock, the members of the Association assembled in the room of the Royal Institution usually devoted to the Choral Society. The attendance was respectable and numerous, upwards of a hundred medical men being present. Among them, in addition to those we have named, were several of the leading practitioners of Manchester, and many strangers from neighbouring towns. On the motion of Professor Kidd, seconded by Dr. Hastings, Dr. Holme, President for the year, was called to the chair. He opened the proceedings with a short address, in which he intimated the advantage which gentlemen would derive, if, after the business of the Association was at an end, they could spend a day or two in the investigation of the state of society in Manchester, particularly among the working classes, and would enquire into the influence which the introduction of manufactures and the hours of labour have upon the health and comforts of the working poor. Every facility would, he was sure, be afforded by the liberality of the manufacturers. He would especially call the attention of those gentlemen who resided in districts purely agricultural to this subject. They were all aware that considerable diversity of opinion prevailed regarding it, but he was sure gentlemen belonging to an honorable profession would approach the question with unbiassed minds, and see for themselves how far the representations which had gone forth to the world were consistent with truth. Dr. Hastings next read the report. It announced an accession of one hundred new members, during the year, and called attention to the fact that a similar Association had been formed in the Eastern counties, the members of which, anxious to join the Parent Institution, had sent a deputation of six of its members to negotiate an alliance. The income of the year is stated to have been, including the balance in hand, 705*l.*, the outlay 498*l.* 1*s.* 7*d.*, leaving a balance of 205*l.* It mentioned the existence of considerable arrears, and suggested that it might be desirable to appoint paid collectors in certain districts. It regretted the omission from the last volume of *Transactions* of many contributions worthy of publication, which were inevitably deferred to a future volume, regretted that the large Hospitals and Infirmarys had forwarded so few statistical observations and reports of cases to the Association, and concluded by urgently inviting the attention of members to the investigation of epidemic diseases, which was one of the original and principal designs of the Association. The accumulation of numerous facts, a register of the rise, progress and decline of epidemics in each district, with a careful minute of dates, and a noting of the condition of the atmosphere, its barometric, thermometric, and hydrometric state, was the thing needed, the object being, not to build a theory, but to record facts from which useful deductions may hereafter be made. The registry, complete to the last day of May, should be forwarded to the nearest member of the Council, and by him transmitted to the Secretaries.

On the motion of Dr. Kidd, seconded by Dr. J. Johnstone, the report was adopted. Mr. Tudor, of Bath, moved the appointment of a Committee, to consider whether it was desirable, and if so on what terms, to form a junction with the Eastern Association, the Committee consisting of Messrs. Barlow, Hebb, Streeten, Kidd, Jordan, and Brown. The motion, being seconded by Dr. Jeffreys, was carried. On the motion of Dr. Scott, seconded by Mr. Ransome, thanks were voted to Dr. Kidd for his services during the year as President, with a high eulogium on the manner in which the Association had last year been entertained at Oxford.

Dr. Barlow, of Bath, proposed the thanks of the meeting to Dr. Hastings and Mr. Sheppard, the Secretaries, with a request to them to continue their services. He said it would be a waste of the time of the meeting to utter a single expression in praise of the motion, but he might say that the resolution could not have been placed with more propriety in the hands of any other person, because it happened that his (Dr. Barlow's) knowledge of the Association preceded (to use an Hibernicism) its formation. When the first conception of it glanced across the mind of Dr. Hastings, he (Dr. B.)

was the earliest friend he consulted, and he had his cordial encouragement to persevere in the noble career he had opened. He never doubted of success, and every body would now perceive the justice of his anticipations.

Dr. Conolly, of Warwick, moved a vote of thanks to the Council and their re-appointment, with the following additional members: Dr. John Alexander, Dr. Lyon, Mr. Hunt, Mr. Noble, Mr. Boutflower, Mr. Jordan, of Manchester, Dr. Kay of Clifton, Dr. Turner of Stockport, Dr. Haviland, Professor of Medicine in the University of Cambridge, Dr. Williamson of Leeds, Mr. Wilson of Gloucester, Dr. Vassall of Aberystwith, Dr. Travers Cox of Yarmouth, Dr. Hudson of Navan, Ireland, Mr. John Needham of Leicester.

Dr. Goldie, of Shrewsbury, proposed the thanks of the meeting to Mr. Hebb and Dr. Clark, for the trouble they had taken in communicating with foreign correspondents, and requested Dr. Clark to convey thanks to Dr. Nasse, of Bonn, for his interesting paper (on the present state of anatomical knowledge in Germany.) Mr. Turner, of Manchester, after paying a warm tribute to his friend, proposed that Dr. James L. Bardsley should be requested to prepare the retrospective address for the annual meeting in 1837. Dr. Streeten, of Worcester, seconded the motion, remarking, that highly as his townsmen might estimate the merits of Dr. Bardsley, they did not estimate them more highly than he. The motion was carried with applause, and was briefly acknowledged by Dr. Bardsley. Dr. Barlow next read a report from the Committee appointed to prepare the rules and obtain subscriptions for the Benevolent Fund. He read the fundamental regulations, which placed the fund simply on the basis of a Benevolent Society, not of an Insurance Association or a Benefit Club. The income up to June has been—Donations announced, 199*l.* 7*s.*, (received, 106*l.* 5*s.*); Subscriptions announced, 49*l.* 7*s.*, (received 22*l.* 1*s.*) making the whole amount announced, 248*l.* 14*s.*, and received, 128*l.* 6*s.* The disbursements have been 11*l.* 15*s.* 2*d.*, leaving a balance in hand of 116*l.* 10*s.* 9*d.*

Dr. Kidd then read to the meeting a paper, consisting of remarks on the anatomical and physiological works of Galen. It set out by expressing an opinion, contrary to the accepted doctrine, that Galen drew his descriptions of anatomy from the human subject, and stated that nearly all the anatomical terms he used were still in use, and for the same purposes to which he applied them. He observed that, to give an account of Galen's system of osteology, would be almost like reading a treatise of any modern writer on the subject. He instanced, as a proof of the philosophical spirit in which Galen pursued his profession, that a man having lost the use of the extremities of his fingers, and vainly sought relief from local remedies, Galen enquired if he had ever received an injury of the spine, and learning that in early life he had, he directed his remedies to the region of the injured spine, and so restored the use of the fingers. Galen maintained that the reasoning power resided in the brain, and that physical structure was indicative of the power of the brain; but he declared that on all occasions, when speaking of the moral actions of men as connected with their physical structure, he only spoke of their innate propensities, not of their conduct as the result of education.

Mr. Ayre, of Leeds, exhibited an apparatus for treating distortion of the spine. It was very simple, its object being to keep the patient quite fixed in an horizontal position, without, however, inflicting the least personal inconvenience. His course of practice, he said, had been always to obtain a straightening of the spine, then to impart bodily strength to the patient, and thus to encourage a healthy deposit for the creation of bone in the weakened part. He exhibited drawings of cases.

The members of the Association met again on Thursday, at twelve o'clock, the attendance being again numerous. Dr. Holme having taken the chair, Dr. Hastings drew attention to the fact that reports on various subjects, which gentlemen had at former meetings been deputed to draw up, had not yet been received.

Mr. Crosse then read the retrospective address for the past year, which was extremely interesting. As it was unanimously decided that this should be printed, we shall have another opportunity of noticing it. It was received with much applause.

Dr. Kidd read the report of the Committee appointed to confer with the deputation from the Eastern Association on the subject of a junction: the report recommended a

delay for a year, the present terms proposed not being such as could be adopted, whilst it was hoped that by a modification of them the object would be accomplished. On the motion of Mr. Wilson, of Manchester, seconded by Mr. Bagnall of Chester, the report was ordered to be printed and its proposal adopted, and Dr. Hastings expressed the obligations of the Association to the gentlemen of the East for travelling so far to effect this desirable object—a sentiment which was afterwards embodied in a motion, and being proposed by Dr. Kidd, and seconded by Dr. Barlow, was adopted. On the motion of Dr. Barnes, of Carlisle, seconded by Dr. Lyon, of Manchester, Cheltenham was fixed on for the next year's meeting, and Dr. Boisragon was chosen President elect.

Dr. Knight, of Sheffield, seconded by Mr. Barnett, of Stourport, proposed the formation of a Committee to investigate and report upon the various modes of extending medical relief to the poor, independent of parochial relief, the Committee to consist of Drs. Forbes, Walker, Conolly, and Barlow, Messrs. Smith, H. W. Rumsey and Nankivill. Mr. Smith, of Southam, brought forward a paper embracing a comparison of the self-supporting Dispensaries, (of which he is the founder,) with other benevolent institutions and clubs. It was not read, but will appear in the Transactions. Dr. Barlow, seconded by Dr. Black, of Bolton, proposed a vote of thanks to the managers of the Royal Institution, and the other public institutions in Manchester, for their courtesy. On the proposal of Dr. Walker, a renewed tender of thanks was made to the Secretaries, and the proceedings terminated in a vote of cordial thanks to Dr. Holme, which was proposed by Dr. Kidd and seconded by Dr. Conolly. The latter gentleman observed that it was not the number of their members, nor the extent of country over which they spread their influence, nor the bulk of their transactions, nor the number of persons attending these delightful annual assemblages, that constituted the most honorable feature of their Association. It would always derive its greatest recommendation to the public and its greatest power of doing good—without which all assemblages were useless—from being honoured with the countenance and cooperation of those who were illustrious for the talent they displayed, the industry they exercised, for their great attainments, and, above all, for the virtue of their character. He said thus much after the very short speech of Professor Kidd, because it gave him the opportunity of alluding to that to which Dr. Kidd could not allude, namely, the circumstance that they had met for successive years under the auspices of Dr. Johnstone, Dr. Carrick, Dr. J. Johnstone, Dr. Kidd, and Dr. Holme. The mention of these names would remind the profession of all the exalted qualities that adorned it, and it was this among the thousand recommendations which made every man proud of being a member of the Association. In returning, therefore, to Dr. Holme their best thanks for the honour of his Presidency, they were returning a debt of gratitude delightful to owe and delightful to pay. It was delightful, too, to witness—and, for himself, he could never sufficiently express himself on this subject—to witness in those whose names were most honoured in the profession, and whom they all should most desire to see honoured, a simplicity of manner and all those indications of amiable character which were so often found in the profession. The Association must always prosper, so long as it numbered among its Presidents those who resembled Dr. Holme.

In the evening the members of the Association, to the number of nearly two hundred, dined together with a few guests, among whom was the illustrious and venerable Dr. Dalton. The chair was occupied by Dr. Holme, and the vice-chairs by Mr. Turner, Mr. Wilson, and Dr. J. L. Bardsley.

Many toasts were drunk and many excellent speeches delivered, but we can only find room for a brief outline of that of Dr. Hastings, on his health being drunk in connexion with the "Provincial Association;" and that of Mr. Turner on his name being coupled with "Provincial Schools."

Dr. Hastings said he could not attempt adequately to express the feelings with which he was overcome when he considered the very distinguished manner in which he had been treated during the whole of this great, influential, and scientific meeting in Manchester, by every member of the Association with whom he had in any way come in contact. The very proudest periods of his life were those he had spent with the members of the Association, and to his dying day he should consider it one of

his highest distinctions to be regarded one of the founders—though a very unworthy one—of the great, flourishing, and extraordinary Association which, he trusted, would carry down to posterity a memorial of the exertions which were now making for the advancement of medical knowledge, and unite together in one firm bond the now disjointed members of the medical profession in the provinces. But a very few years ago they were in every sense of the word a disjointed set of people. A town existed here and there with a distinguished member of the profession rising up in it, but like the little states of England in early times, they were disconnected as a class—little rivalries and jealousies kept them asunder, and as a body they made no progress. He took no praise to himself, because by this Association the evil was likely to be abated, and the whole profession in the provinces likely to become linked together in one firm bond of mutual co-operation and reciprocal good offices. The condition of things was favorable for receiving the proposal at the very moment it was made, and thus it had happened that the Association had risen to an eminence which in the first workings of the idea in his own mind he never could have foreseen. It could not indeed have been supposed, looking to the state of the provinces eight years ago, that after the lapse of a few years an Association should branch forth and extend itself, as this had done, over every part of England. It was indeed a proud day for them, when they met in Oxford under the auspices of the learned Professor, and when the most learned of the land and the most distinguished of the University came forward to do homage to their Association. They were, however, equally fortunate on this occasion in meeting in this sub-metropolis of the country, the centre of the cotton manufacture, which had tended so much to increase the benefits of modern civilization. In Manchester they had an instance, such as was not afforded in any country in the world, of the intimate connexion between science and commerce—and no where had that connexion been carried forward with so much advantage to the community as in this great city. This was the first provincial town in which the memoirs of any scientific society were ever published, and he was sure every one would agree with him in thinking that at the present day Manchester contained many eminent and worthy successors of Percival, Ferriar, and White.

Mr. Turner said, nothing could afford him more pleasure than the circumstance of having this name associated with the toast which had just been given; for he did not hesitate to declare that there was no subject nearer his heart, and none he was more anxious to accomplish than the establishment of Provincial Schools, from a conviction that they were destined to have an important effect on the future education of medical men. It was not remarkable that "The Success of Provincial Schools" should be among the appointed toasts of that evening; but as there existed a difference of opinion as to the practicability and efficiency of provincial medical education, it could not fail to be extremely gratifying to the provincial teachers there assembled, to find that so large a majority of the intelligent and influential members of the profession should be advocates for it; for what other interpretation could be put upon the enthusiasm with which they had received the toast proposed from the chair? It was not necessary for him to dwell upon the rise and progress of such establishments. The necessity for them was created by the growing intelligence of the times—times when education was giving such an impulse to all classes of society, as would tend to elevate the character of man, as a social and intelligent being. Under these circumstances, was it not a duty incumbent upon them to improve the condition of the medical student, so as to enable him to keep pace with the other branches of society, and to maintain that dignity and science which belonged to their profession, which might otherwise be swept away in the stream of knowledge now rushing with such tremendous impetuosity through all the walks of life. It was not possible to sum up in a few words the advantages which would be sure to accrue from Provincial Medical Schools; but viewing them in their more humble pretensions, if they have the effect of directing the mind of youth into the proper channels for information—of preventing the assiduous student from languishing for want of opportunity of acquiring knowledge—they surely were objects of interest, and well deserving of the support of the moralist, the philanthropist, and every well-wisher to science and the medical profession. He concluded by observing that proofs were not wanting, that the education given in Provincial Establishments was good and true; and he would venture to

appeal to the examining bodies of the profession, and ask, whether recent experience has not tended to confirm the dictum, both publicly and privately pronounced, that nothing has contributed so much to enhance the dignity of the profession, by giving better education to its members, as the establishment of Provincial Schools.

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#### **SOUTHERN BRANCH OF THE PROVINCIAL MEDICAL AND SURGICAL ASSOCIATION.**

WE are happy to state that the Provincial Physicians and Surgeons resident in the Counties of Hants., Sussex, Wilts., Dorset, &c. are forming themselves into a local Association, subordinate to and strictly a part of the great original Provincial Association. Our readers are aware that a Branch Association has been already formed in the Eastern counties; and we doubt not that, before many years, the whole of the littoral counties of England will be portioned out into similar sectional and subordinate Associations. The effect of such unions cannot but be beneficial to the members and to the profession at large; and, so long as they are framed in strict accordance with the principles of the original Association, and are indeed merely local sections of it, they will themselves flourish and advance the interests of their parent; but no longer. That the southern branch of the Provincial Medical Association will be of this character, is evident from the terms of the circular calling the Preliminary Meeting for the purpose of establishing it, as in this the Requisitionists "solicit the aid of their brethren in the district for the purpose of forming an Association of Medical and Surgical Practitioners which may be considered as a branch or section of the Parent Society, to co-operate in its views and designs, to act in accordance with the spirit of its regulations, and to collect and embody such materials as may be deemed worthy the consideration of the great Association at its Annual Meetings."

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#### **REPORT OF THE COURT OF EXAMINERS TO THE SOCIETY OF APOTHECARIES.**

THE Court of Examiners, in reporting to the Master, Wardens, and Court of Assistants, the result of their labours during the past year, have the honour to state, that the total number of candidates examined during that period amounts to 556, being considerably above the number of any former year.

Within that period, 450 gentlemen have received their certificates of qualification; of whom, several have shown so great a proficiency in every branch of their medical studies, as to have received the especial commendations of the Court, and 106 have been directed to return to their studies for the period prescribed by the act of parliament; of which number, thirty-six have been rejected solely on account of their defective knowledge of the Latin language.

The Court regret extremely that they are compelled to report so large a proportion of rejections during the last year, amounting nearly to one in every five candidates, and they cannot but lament that ignorance of the Latin language still continues to be of such frequent occurrence; and this is the more to be regretted, as the attention of the profession has been called repeatedly, during the last twenty years, to this particular point.

In order more efficiently to test the classic attainments of the candidates, and at the same time to enable them subsequently to devote their time exclusively to their medical studies, the Court instituted last year a preliminary examination in the Latin medical classics, which came into operation on the 30th May, 1835, and has been continued every succeeding Saturday, under the direction of three members of the Court, who take this duty in rotation. Since that time, 1200 students have undergone this examination. The Court have reason to know that this plan has proved highly acceptable to the students, not only in London, but throughout the whole of the provincial schools.

The Court beg to subjoin the number of the registrations in the London and provincial schools in October, 1835:—

*Of Pupils Registered.*

In the provincial schools . . . . .	322
London . . . . .	640
Total . . . . .	962

J. BACOT, Chairman.

*Apothecaries' Hall, July 28, 1836.*

In reference to the last clause but one of the foregoing Report, we beg leave to subjoin a few remarks which we made when the subject first came before us, and which we reprint from the second number of our journal, p. 519. To these remarks we respectfully call the attention of the Court of Examiners.

"We have not time at present to enter upon the subject of the preliminary education requisite for the medical student, of which the study of the Latin language constitutes so important a part; but we must be permitted to observe, in passing, that, if the recent regulation adopted by the Apothecaries' Company, of admitting young men to their classical examination on *commencing* their studies in London, be designed to exclude all further testing of the candidate's proficiency in the Latin language, when they present themselves for the licence after completing their medical studies, the rule is, in our opinion, most injudicious, and calculated to perpetuate and increase the very evils it was intended to mitigate or remove. It is surely not merely desirable that the student should give evidence that he has acquired a competent knowledge of the Latin language, previously to entering on the serious business of studies more strictly professional, but also that he preserves this knowledge during the progress of these studies, and carries it into practice with him. It would, no doubt, be of advantage to a medical student to have undergone the intellectual training implied by the study of the ancient languages, even if, on entering upon his profession, he were to lose all practical knowledge of them; but surely it will be equally admitted that the preservation of the knowledge acquired in the classical school-room, must be at least of as great importance to the practitioner of medicine. Now, does not the regulation alluded to almost seem to imply—(it being assumed that this preliminary examination is the only one in classics,) that the student, having once exhibited the requisite degree of competency in Latin, may for ever after disregard it? Or, at least, will not this be, in fact, the practical operation of the regulation on the minds of a considerable number of students? The learned directors of the Apothecaries' Company may have had a truer and more disinterested love of Latin for itself, and a more astringent memory for vocables and syntax, than we could ever boast of; but, for our own parts, we are bound, by the faith of honest criticism, although with shame and confusion of face, to acknowledge that, had it not been for the consciousness ever present to us during our medical studies, that we should have to *make our appearance in Latin* at the end of them, we might, in our free zeal for *science*, have actually forgot, if not all, at least much of the *literature* that had been forced upon us in our earlier years. We shall heartily rejoice to find that there is a difference in this respect between the students of present and former times, and that the good intentions of the Apothecaries' Company, which we do not for one moment call in question, will be fulfilled, and our fears proved to be without foundation: we, however, to say the least, entertain very strong doubts on the subject." (*British and Foreign Med. Review*, No. II. p. 519.)

## MEDICAL WITNESSES' BILL.

IN giving a copy of this excellent Bill, we feel bound to express our acknowledgments, in common with the profession generally, to the author of it, Mr. Wakley, M. P. for Finsbury. It is certainly matter of regret that there are not more members in the House of Commons qualified and disposed to watch over the interests of the medical profession. We yet hope to see the defect satisfactorily supplied.

*An Act to provide for the Attendance and Remuneration of Medical Witnesses at Coroner's Inquests.* [August 18th, 1836.]

I. Whereas it is expedient to provide for the attendance of medical witnesses at coroners' inquests, also remuneration for such attendance, and for the performance of post-mortem examinations at such inquests: Be it therefore enacted, . . . that, from and after the passing of this act, whenever, upon the summoning or holding of any coroner's inquest, it shall appear to the coroner that the deceased person was attended at his death, or during his last illness, by any legally qualified medical practitioner, it shall be lawful for the coroner to issue his order . . . for the attendance of such practitioner as a witness at such inquest; and if it shall appear to the coroner that the deceased person was not attended at or immediately before his death by any legally qualified medical practitioner, it shall be lawful for the coroner to issue such order for the attendance of any legally qualified medical practitioner, being at the time in actual practice in or near the place where the death has happened; and it shall be lawful for the coroner, either in his order for the attendance of the medical witness, or at any time between the issuing of such order and the termination of the inquest, to direct the performance of a post-mortem examination, with or without an analysis of the contents of the stomach or intestines, by the medical witness or witnesses who may be summoned to attend at any inquest, provided that if any person shall state upon oath before the coroner that, in his or her belief, the death of the deceased individual was caused partly or entirely by the improper or negligent treatment of any medical practitioner or other person, such medical practitioner or other person shall not be allowed to perform or assist at the post-mortem examination of the deceased.

II. And be it further enacted, That whenever it shall appear to the greater number of the jurymen sitting at any coroner's inquest, that the cause of death has not been satisfactorily explained by the evidence of the medical practitioner or other witness or witnesses who may be examined in the first instance, such greater number of the jurymen are hereby authorised and empowered to name to the coroner, in writing, any other legally qualified medical practitioner or practitioners, and to require the coroner to issue his order . . . for the attendance of such last-mentioned medical practitioner or practitioners as a witness or witnesses, and for the performance of a post-mortem examination, with or without an analysis of the contents of the stomach or intestines, whether such an examination has been performed before or not; and if the coroner, having been thereunto required, shall refuse to issue such order, he shall be deemed guilty of a misdemeanour, and shall be punishable in like manner as if the same were a misdemeanour at common law.

III. And be it further enacted, That when any legally qualified medical practitioner has attended upon any coroner's inquest, in obedience to any such order as aforesaid of the coroner, the said practitioner shall for such attendance at any inquest in Great Britain be entitled to receive such remuneration or fee as is mentioned in the table marked (B.) in the schedule hereunto annexed; and for any inquest held in Ireland, the said practitioner shall be paid in the manner provided by the laws in force in that part of the United Kingdom; and the coroner is hereby required and commanded to make . . . his order for the payment of such remuneration or fee, when the inquest shall be held in Great Britain; and such order may be addressed and directed to the churchwardens and overseers of the parish or place in which the death has happened; and such churchwardens and overseers, or any one of them, is and are hereby required and commanded to pay the sum of money mentioned in such order of the coroner to the medical witness therein mentioned, out of the funds collected for the relief of the poor of the said place.

IV. Provided nevertheless, and be it further enacted, That no order of payment shall be given, or fee or remuneration paid, to any medical practitioner for the performance of any post-mortem examination which may be instituted without the previous direction of the coroner.

V. Provided also, and be it further enacted, That when any inquest shall be holden on the body of any person who has died in any public hospital or infirmary, or any building or place belonging thereto, or used for the reception of the patients thereof, or who has died in any county or other lunatic asylum, or in any public infirmary or other public medical institution, whether the same be supported by endowments or by voluntary subscriptions, then and in such case nothing herein contained shall be construed to entitle the medical officer whose duty it may have been to attend the deceased person as a medical officer of such institution as aforesaid to the fees or remuneration herein provided.

VI. And be it further enacted, That where any order for the attendance of any medical practitioner as aforesaid shall have been personally served upon such practitioner, or where any such order not personally served shall have been received by any medical practitioner in sufficient time for him to have obeyed such order, or where any such order has been served at the residence of any medical practitioner; and in every case where any medical practitioner has not obeyed such order, he shall, for such neglect or disobedience, forfeit the sum of five pounds sterling, upon complaint thereof made by the coroner or any two of the jury before any two justices having jurisdiction in the parish or place where the inquest under which the order issued was held, or in the parish where such medical practitioner resides; and such two justices are hereby required, upon such complaint, to proceed to the hearing and adjudication of such complaint, and if such medical practitioner shall not show to the said justices a good and sufficient cause for not having obeyed such order, to enforce the said penalty by distress and sale of the offender's goods, as they are empowered to proceed by an act of parliament for any other penalty or forfeiture.

VII. And be it enacted, That nothing in this act contained shall extend to Scotland.

(B.) *Table of Fees.*

1. To every legally qualified medical practitioner, for attending to give evidence under the provisions of this act, at any coroner's inquest, whereat no post-mortem examination has been made by such practitioner, the fee or remuneration shall be one guinea.
2. For the making of a post-mortem examination of the body of the deceased, either with or without an analysis of the contents of the stomach or intestines, and for attending to give evidence thereon, the fee or remuneration shall be two guineas.

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UNIVERSITY OF EDINBURGH. PRIZES TO BE GIVEN BY THE MEDICAL FACULTY.

I. The Medical Faculty resolve, That they will present annually three gold medals to the medical graduates of the university, for the best thesis on three specified subjects.

II. That the first presentation shall take place on the graduation-day of 1837.

III. That the following shall be the subjects of competition for that year:

1. An Experimental Inquiry into the Physiology of Cutaneous Absorption, with its application to Therapeutics.

2. An account of the cases, or of any class of cases, occurring in the medical clinical wards attached to the university, during any quarterly period between 1st November, 1835, and 1st May, 1837, with the exception of the autumn of 1836.

3. An account of the cases, or of any class of cases, occurring in the surgical clinical wards attached to the university, during any quarterly period between 1st November, 1835, and 1st May, 1837, with the exception of the autumn of 1836.

IV. That the competing Theses shall be transmitted to the Dean of the Medical Faculty on or before 1st June, 1837.

V. That each Thesis shall be accompanied with a sealed packet, inclosing the following declaration, signed by the Author:



"I hereby declare on my honour, that in composing the annexed treatise, I have received no aid from any individual."

To which in the case of experiments he will add,—“and that the experiments described in it were performed with my own hands, and without any other assistance except what was indispensable for their performance.”

The Thesis and sealed packet to be identified by a motto, and written in a fair and legible hand, and in such manner as that the author cannot be known till the sealed packet be opened. The language to be English, Latin, or French.

VI. That in the case of experiments the author of the Thesis pronounced to be the best may be called on to repeat and authenticate his results before a Committee of the Faculty.

VII. That the Faculty reserve to themselves the power of withholding any of the medals, if it shall appear to them that none of the Theses on one or more of the specified subjects is worthy of being so distinguished.

VIII. That the Competitors shall transmit to the Dean, at the same time with the other Candidates, the usual Thesis on any subject different from those specified for the Competition.

IX. That the Faculty will further bestow a fourth Gold Medal on the author of any Thesis on a subject chosen by himself, which may appear to them the best of the Thesis of that class, and worthy of receiving the honour.

X. That the successful Thesis shall in every case be published by their respective authors, with an appropriate title designating them as the Prize Dissertations for the year.

THOS. STEWART TRAILL,  
*Dean of the Medical Faculty.*

#### TEACHERS OF ANATOMY AND SURGERY.

*To Gentlemen applying for the recognition of the Royal College of Surgeons in London, as Teachers of Anatomy and Surgery.*

THE Council of the Royal College of Surgeons deem it essential that teachers of anatomy should be provided with the preparations of parts mentioned in the following schedule, intended to comprise those preserved, injected, or otherwise prepared structures, which cannot be adequately demonstrated in the recent subject.

1. Artificial skeletons, male and female.
2. The several bones of the skeleton, including the separated bones of the cranium.
3. Sections of the cranium.
4. Preparations showing the structure and growth of bone.
5. The component structures of the various joints.
6. The deciduous and permanent teeth, their structure and formation.
7. The mouth, salivary glands, fauces, and other parts concerned in deglutition.
8. The organs of digestion and their appendages; exhibiting the structure of the alimentary canal, of the glandular and other parts concerned in the digestive process.
9. The thoracic duct, the lacteals, and the other absorbent vessels, with their glands.
10. The heart, exhibiting its structure in the adult and fœtal states; and the parts concerned in the circulation of the fœtus.
11. The blood-vessels, their structure, arrangement, and distribution.
12. The larynx, the trachea, and the lungs, with the distribution of the air-tubes and the blood-vessels.
13. The brain and spinal chord, with their membranes.
14. The nerves, their origin, structure, and distribution.
15. The organs of the senses.

1. Of sight: the globe of the eye, its component textures, the lachrymal apparatus, and its other appendages.
2. Of hearing: the various parts comprised in its external, middle, and internal divisions.
3. Of taste: the tongue, its nerves and papillæ.
4. Of smell: the nasal chambers, the communicating sinuses and their lining membranes.
5. Of touch: the peculiar conformation of the skin instrumental thereto, with the structure of the common integuments and their appendages.
16. The urinary organs, showing the structure of the kidney and ureters, of the bladder, the urethra, and Cowper's glands.
17. The male organs of generation, exhibiting the structure of the testis and vas deferens, of the vesiculæ seminales, of the prostate gland, and of the penis.
18. The female organs of generation in the unimpregnated and gravid state.
19. The peculiarities of the fœtus.

It is expected that teachers of surgery should have the means of illustrating by suitable preparations those points in pathology and practice which are treated of in surgical lectures.

March 15th, 1836.

EDMUND BALFOUR, Sec.

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#### BOTANICAL SOCIETY OF EDINBURGH.

THIS Society, which is exclusively devoted to the advancement of Botanical Science, was instituted the 17th of March last. Its peculiar feature, and that in which non-residents are peculiarly interested, is the provision made for the interchange of dried specimens. "Desiderata and duplicates will, as far as possible, be supplied from the Society's collections to all its members; and individuals, anxious to improve or complete herbaria, will thus secure the important advantage of exchanging the botanical productions of their respective districts for those of others more remotely situated. The Flora of Edinburgh, which is particularly rich, will afford a constant supply of valuable duplicates, and many rare species will be annually obtained from the mountainous parts of Scotland." The following are some of the laws of the Society which apply to non-resident Members: 1. Any person not residing in Edinburgh may be elected a non-resident member, on being recommended by two members of any scientific or literary society, and paying 2*l.* 2*s.* 2. Any person residing abroad may be admitted a foreign member, on the transmission of five hundred specimens, (including at least one hundred species,) or a botanical work of which he is the author: if the former, he will be entitled to specimens from the Society's collection in exchange. 3. To entitle a resident or non-resident member to a share of the Society's duplicates, it is requisite that he shall not be in arrear, and shall have given to the Society, in the course of the year, not less than fifty specimens of plants.

The members are to be called "Fellows of the Botanical Society."

Edinburgh is in every respect well suited for the head-quarters of such a society: its Flora is both rich and rare; its botanical garden is admirably arranged and regulated; and its professor (whom we rejoice to see as president of this institution,) is eminently qualified to communicate to a numerous class of pupils, collected for a time from all parts of the globe, that enthusiasm for botany which he himself possesses, and without which no progress can be made in the science. We heartily wish it success.

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#### THE NEW REGISTRATION ACT.

It is most gratifying to every friend of humanity to observe the progressive advances now daily making in all the peaceful arts, and the increased attention of all free governments towards what may be termed social and scientific legis-

lation. A striking instance of this we have in the Registration Bill passed by our legislature during the last Session, which goes a great way towards supplying some of the most important desiderata in medical statistics. We are by no means sure that the machinery which has been adopted for the purpose of carrying into effect the provisions of the act, is the best that might have been chosen, and we have apprehensions, accordingly, respecting its ready and effective working; but there can be no doubt that a great boon has been conferred on society by it; and we do not fear to see remedied any practical defects that it may now involve. The great thing was to get the legislature to make a commencement.

The act is entitled "An Act for registering Births, Deaths, and Marriages in England," and it effectually provides for the accurate registration of all these events, without regard to the station, religion, or any other condition of the individual.

By this act, a *Superintendent Registrar* is to be attached to every parochial union established by the Poor-Law Amendment Act, and a *Registrar* to each district into which such union may be divided. The registrars are to keep a record of the births, deaths, and marriages occurring in their respective districts, which they are to transmit quarterly to the superintendant registrar of the union, who is to transmit them to the office of the *Registrar General* in London, also quarterly. An abstract of all these registrations throughout England is to be laid annually before parliament, and will become, as a matter of course, accessible as a public document to every one. Effectual provisions are made for rendering the registration imperative in all cases.

Of all the particulars included in this act, there is none so interesting to the medical profession as that which enjoins the *cause of death* to be registered in each case; and, if due care is taken to have this part of the duty properly performed, it cannot be doubted but that the most valuable information respecting the laws of health and disease will eventually be therethrough obtained, with the necessary result of ameliorating the health of the community at large, and extending the mean term of human life in this country.

The following are the particulars enjoined to be recorded in each case of birth, death, and marriage, respectively:

BIRTHS.	DEATHS.	MARRIAGES.
1. No. in the register.	1. No. in the register.	1. No. in the register.
2. When born.	2. When died.	2. When married.
3. Name, if any.	3. Name and surname.	3. Name and surname.
4. Sex.	4. Sex.	4. Age.
5. Name and surname of father.	5. Age.	5. Condition.
6. Name and maiden surname of mother.	6. Rank or profession.	6. Rank or profession.
7. Rank or profession of father.	7. Cause of death.	7. Residence.
8. Signature, description, and residence of informant.	8. Signature, description, and residence of informant.	8. Father's name and surname.
9. When registered.	9. When registered.	9. Rank or profession of father.
10. Baptismal name, if added after registration of birth.		

#### OBITUARY.

AT Manchester, on the 5th September, WM. HENRY, M.D., one of the most distinguished of British chemists. Dr. Henry has long been most favorably known by his numerous writings, which are chiefly chemical. These extend over a period of nearly forty years. The following are some of his chief works published separately; but he was a large contributor to the scientific journals

of the day:—Experiments on Carburetted Hydrogen, *Lond.* 1797. 4to. On the Nature and Objects of Chemistry, *Manch.* 1799. 8vo. Epitome of Chemistry, *Lond.* 1801. 8vo. Elements of Experimental Chemistry, 2 vols. 8vo. *Lond.* 1810. On the Disinfecting Powers of increased Temperature, 1831, 8vo. An Estimate of the Philosophical Character of Dr. Priestley. *York*, 1832, 8vo. —Dr. Henry was as estimable in his private character as he was publicly honoured. His loss is extremely regretted in Manchester, of which place he was a conspicuous benefactor.

At Berlin, August 26th, the celebrated professor and physician, C. W. HUFELAND, in the 75th year of his age, after an illness of four weeks. Hufeland was born on the 12th of August, 1762. As a practising physician, a teacher of medicine, and a medical writer, Dr. Hufeland has been universally known during the last forty years, and, we may add, has been as generally respected as known. We shall give some account of his life and writings in a future Number.

#### BOOKS RECEIVED FOR REVIEW.

1. Elements of Medical Jurisprudence. By T. R. Beck, M.D., Professor of the Institutes of Medicine, &c., and J. B. Beck, M.D., Professor of Materia Medica, &c. Fifth Edition.—Two vols. 8vo. pp. 661. 694. Albany, 1835.
2. A Course of Legal Study. By David Hoffmann, Sur. Utr. Doct. Göttingen, Second Edition, rewritten and much enlarged.—Two volumes. 8vo. pp. 876. Baltimore, 1836.
3. The Philosophy of Living; or, the Way to enjoy Life and its Comforts. By Caleb Ticknor, A.M. M.D.—New York, 1836. 12mo. pp. 334.
4. Elements of Medical Jurisprudence. By A. S. Taylor, Esq., Lecturer on Medical Jurisprudence, &c. in Guy's Hospital. Vol. I.—London, 1836. 8vo. pp. 511.
5. A Dictionary of Terms employed by the French in Anatomy, Physiology, Pathology, &c.; with their Derivations, Synonyms, &c. Part II. By Shirley Palmer, M.D.—London, 1836. 8vo. pp. 160. (Cor—HVL.)
6. Aur. Cor. Celsus on Medicine, in eight Books, Latin and English. Translated from L. Targa's Edition, the Words of the Text being arranged in the order of Construction. To which are prefixed, a Life of the Author, Tables of Weights and Measures, with explanatory Notes, &c., designed to facilitate the Progress of Medical Students. By Alexander Lee, A.M. Surgeon.—Two vols. 8vo. pp. 318, 501. London, 1831, 1836.
7. The Cotton Manufacture of Great Britain systematically investigated, and illustrated by 150 original Figures, engraved on wood and steel; with an introductory View of its comparative State in Foreign Countries, drawn chiefly from Personal Survey. By Andrew Ure, M.D. F.R.S. &c.—London, 1836. Two vols. 8vo. pp. 359, 455.
8. The Proofs of Infanticide considered; including Dr. Hunter's Tract on Child-murder, with illustrative Notes; and a Summary of the present State of Medical-legal Knowledge on that subject. By Wm. Cummin, M.D., Lecturer on Forensic Medicine at the Aldersgate School.—London, 1836. 12mo. pp. 95.
9. The Speculum applied to the Diagnosis and Treatment of the Organic Diseases of the Womb: an Inaugural Dissertation presented to the University of Glasgow for the Degree of Doctor in Medicine. By John Balbirnie, A.M.—London, 1836. 8vo. pp. 335.
10. A Treatise on some Nervous Disorders; being chiefly intended to illustrate those Varieties which simulate Structural Disease. By Edwin Lee, M.R.C.S.—London, 1835. 8vo. pp. 152.
11. On Deformities of the Chest. By Wm. Coulson, Consulting Surgeon to the London Lying-in Hospital, &c.—London, 1836. 8vo. pp. 71; with Plates.
12. Report of the Directors of the Dundee Lunatic Asylum, for the year ending 31st May, 1836.—Dundee, 1836. 8vo. pp. 37.
13. On the Efficacy of Carbonic Acid Gas in the Diseases of Tropical Climates; with Directions for the Treatment of the Acute and Chronic Stages of Dysentery. By John Parkin, Member of the Royal College of Surgeons, &c.—London, 1836. 8vo. pp. 64.

14. A few Hints on the Principle of Self-supporting Dispensaries, and its Adaptation to the Medical Relief of the Poor. By Charles Wilkinson, M.D.—London, 1836. 8vo. pp. 47.
15. The Practical Anatomy and Elementary Physiology of the Nervous System; designed for the use of Students in the Dissecting Room. By F. Le Gros Clark, Demonstrator of Anatomy in St. Thomas's Hospital.—London, 1836. 8vo. pp. 367.
16. An Introductory Lecture delivered to the Mathematical Class at the Royal School of Medicine and Surgery at Birmingham, 12th May, 1836. By the Rev. W. M. Lawson, M.A.—Birmingham, 1836. 8vo. pp. 53.
17. The Medical Works of Paulus Aegineta, translated into English, with a copious Commentary. Vol. I. By Francis Adams, Esq., Surgeon.—London and Aberdeen, 1834. 8vo. pp. 474.
18. Researches on the Effects of Blood-letting in some Inflammatory Diseases, and on the Influence of Tartarized Antimony and Vesication in Pneumonitis. By P. C. A. Louis. Translated by C. G. Putnam, M.D. With a Preface and Appendix, by James Jackson, M.D., Physician of the Massachusetts General Hospital.—Boston, 1836. 8vo. pp. 171.
19. Researches into the Physical History of Mankind. By J. C. Prichard, M.D. F.R.S. M.R.I.A. &c. Third Edition. Vol. I.—London, 1836. 8vo. pp. 376; seven Plates.
20. Cyclopædia of Anatomy. Parts VII. and VIII. (Cilia—Death).—London, 1836.
21. An Essay on the Operation for Cleft Palate. By George Bushe.—New York, 1835. 4to.
22. Valedictory Address delivered to the Graduates of the Jefferson Medical College. By G. McClellan, M.D.—Philadelphia, 1836. 8vo.
23. Coup d'Œil sur les Hôpitaux de Londres, et sur l'Etat actuel de la Médecine et de la Chirurgie en Angleterre. Par Edwin Lee, Membre du Collège Royal des Chirurgiens à Londres.—Paris, 1836. 8vo. pp. 40.
24. De Aneurismatibus Arteriarum Cerebri. Auctore A. A. A. Stumpff.—4to. pp. 36. Berolini, 1836.
25. De Corneis Humani Corporis Excrescentiis. Auct. R. Fawcett Ainsworth, Mancuniensis.—Berolini, 1836. 4to. pp. 26.
26. Beobachtung einer auffallenden bisher unerkannten Structur des Seelenorgans bei Menschen und thieren. Von C. G. Eberenberg. Mit sechs Kupfertafeln.—Berlin, 1836. Fol. pp. 57.
27. Die Rein-chirurgischen Operationen des Geburtshelfers. Von Dr. H. F. Kilius.—Bonn, 1835. 8vo. pp. 410.
27. Sammlung auserlesener Abhandlungen und Beobachtungen aus dem gebiete der Ohrenheilkunde. Herausgegeben von Dr. C. G. Lincke. I.-II. Sammlung.—Leipzig, 1836. 8vo.
28. Handbuch der Physiologie des Menschen für Vorlesungen. Von Dr. Johannes Müller. Erster Band.—8vo. pp. 856. Coblenz, 1835.
29. Parallèle des divers Moyens de traiter les Calcaux. Par le Docteur Civiale.—Paris, 1836. 8vo. pp. 402.
30. Traité Pratique de la Syphilis. Par le Baron Philippe Boyer.—Paris, 1836. 8vo. pp. 284.
31. Anatomie du Système Dentaire, considérée dans l'Homme et les Animaux. Par Ph. Fr. Blandin, Chirurgien de l'Hôtel Dieu, &c.—Paris, 1836. 8vo. pp. 234.
32. Le Système Lymphatique, considérée sous les Rapports Anatomique, Physiologique, et Pathologique. Par G. Breschet, M.D. &c.—Paris, 1836. 8vo. pp. 304. iv. Planches.
33. Eine auserlesene Sammlung der nöthigsten abbildungen äusserlich sichtbaren Krankheitsformen, &c. Zum gebrauch für Praktische Chirurgie. Herausgegeben von Dr. A. Froniep.—4to. Weimar, 1836.
34. The Western Journal of the Medical and Physical Sciences. Edited by Daniel Drake, M.D., Professor of Medicine in Cincinnati College, and W. Wood, M.D.—Cincinnati, Ohio. Vol. III. No. 3. Jan. 1836.
35. The Jamaica Physical Journal. Edited by W. Arnold, M.D.—Kingston, Jamaica. January—April, 1836.
36. The India Journal of Medical and Physical Science. Edited by F. Corbys, Esq.—Calcutta, January, February, and March, 1836.
37. Jahrbücher der In- und Ausländischen gesammten Medicin, Herausgegeben von C. C. Schmidt, M.D. &c.—Leipzig. No. I.—VI. 1836.
38. Handbuch der Menschlichen Anatomie. Von C. Fr. Th. Krause, M.D., Professor der Anatomie, &c.—Hanover, 1836. 8vo.
39. Darstellungen und Ansichten zur Vergleichung der Medicin in Frankreich, England, und Deutschland. Von Dr. Adolph Mühry.—Hanover, 1836. 8vo. pp. 283.
40. Manuel de Médecine Opératoire. Par J. F. Malgaigne, M.D., Prof., &c. 2nd Edit.—Paris, 1837. 12mo. pp. 773.

*Explanation of the Plates to illustrate the Article on the Structure of the Skin,  
p. 429. Plate I.*

Fig. 1. (In this drawing, the component parts of the skin are represented simply with respect to their relative situations and forms, without any regard to their number.) Inferior surface of the foot. *a.* External surface of the epidermis of the heel. *b.* Prominent papillary lines separated by transverse fissures, *c*; in the middle of which is seen the opening of a sudatory pore. *d.* Furrows parallel to the prominent lines. *e.* Internal surface of the epidermis, moulded upon the dermis and lifted up. *f.* Series of apertures which receive the papillæ. *g.* Little interpapillary partition, or prominence of epidermis, interposed between two bifid papillæ, and pierced by apertures for the passage of the sudoriferous canals, some of which are seen (*h*) in the form of threads penetrating into the dermis. *i.* Large partition of the epidermis, more in relief than the former, and received into the furrows of the dermis. *j.* External surface of the dermis. *k.* Prominent lines abounding in papillæ, generally two and two, and between them (*l*) the apertures by which the sudoriferous canals pass outwards and the inhalent vessels enter. *m.* Furrows of the dermis, where the excretory canals of the epidermic matter terminate. *n.* Internal face of dermis, perforated for the passage of blood-vessels, nerves, &c. *o.* Adipose tissue beneath the dermis.

Fig. 2. Portion of the internal surface of the Epidermis, which is in contact with the dermis; the same as that marked *e* in the preceding figure, but much magnified and dried. An upper layer of matter has been removed, that the perforations may be better seen. *a.* Prominent septa received into the furrows of the dermis, perforated laterally by small apertures for the passage of the lymphatic vessels. *b.* Interpapillary septa, pierced by the sudoriferous canals. *c.* Apertures which serve as sheaths to the papillæ.

Fig. 3. *a.* A group of papillæ, magnified. *b.* Dermis.

Fig. 4. Sudoriferous organ. *a.* Dermis. *b.* Glandular secreting organ. *c.* Spiral excretory canal, passing between the papillæ, traversing the epidermis, and opening at the pores of the skin.

Fig. 5. *a.* Nervous papillæ. *b.* The same cut near the dermis, and turned so as to exhibit the opening which corresponds to each papilla, by which the nervous pulp and the blood-vessels enter.

Fig. 6 represents the apparatus which constitutes the tactile organ in man. *a.* Nerve entering into the dermis, where it becomes capillary. *b.* Its entrance into the papillæ. *c.* Neurilema furnished by the dermis. *d.* Proper envelope of the nerve. *e.* Layer of epidermis, more or less thick, the organ of protection.

Fig. 7. *a.* Canal of the inhalent vessels. *b.* Papillæ. *c.* Epidermis. The branches which come from the epidermis terminate in the common trunk.

Fig. 8. Inhalent vessels in the epidermis of man.

Fig. 9. A fragment of these vessels, farther magnified.

Fig. 10. Inhalent vessels, such as they have been seen upon the epidermis of the trunk of an elephant.

Fig. 11. *a.* Secreting organ of the mucous matter. *b.* Its excretory canal; *c.* blood-vessel. *d.* Small, whitish granules which surround it.

Fig. 12. *a.* Dermis. *b.* Papillæ. *c.* Epidermis lifted up, at *d*, to show its origin in the furrows of the dermis between the papillæ. The torn prolongations correspond to the excretory ducts of the colorific apparatus.

Fig. 13. *a.* Colorific organ, torn in two parts (*b* and *c*), to show the escape of the scales which are there formed, and the filiform vessels of which the organ is composed. *d.* Small excretory canals, which are torn where the epidermis is elevated. *e.* Secreting organ of the mucus, which is poured out above the colorific organ. *f.* Fluid state of the epidermis, i. e. pigment or scales floating in the midst of the mucus. *g.* Layers of epidermis, which are stratified to the right and left, and which become more condensed in proportion as they become more external.

*Explanation of Plate II.*

Fig. 1. A synthetic figure or schema of the Human Skin. *a*. Dermis. *l*, *m*. Epidermis. *c*. Vessels and nerves which enter into or which escape from the dermis. *e*. Nervous papillæ. *f*. Sudoriferous organ. *g*. Its spiral excretory duct, which traverses the dermis, passes behind the papillæ, and terminates at the pores of the epidermis. *A*. Inhalent vessels, originating in the most external layer of the epidermis, ramifying and anastomosing before they penetrate the dermis by the openings through which the spiral ducts pass. *i*. Colorific organ. The portion which is cut is alone seen, because it extends along the furrows. Its excretory canals open in the furrows, between two ranges of papillæ. *j*. Organ which secretes the mucus. *k*. Its excretory canal, opening in the furrows of the dermis between the papillæ. There the mucus, mixed with scales, at first fluid, solidifies in successive layers, right and left, as is seen on that incision of the skin which is made across the furrows, *l*; but, in the longitudinal section, *m*, these layers present a series of straight lines placed above one another. It is thus also that the epidermis is decomposed by maceration. The superior surface of the epidermis presents furrows, *n*, which correspond to those of the dermis, and the prominent papillary lines, *o*; separated by transverse fissures, *p*, at the bottom of which are found the pores of the sudoriferous canals.

Fig. 2. A lamina of the skin of the human head. *a*. The epidermis, here very thin. *b*. The dermis. *c*. The adipose tissue beneath. *d*. The hair bulbs. *e*. The shaft of the hair. *f*. The hair follicle. *g*. The sebaceous glands; *h*, their duct. *i*, *k*. Sudorific organ, (Gurlt.)

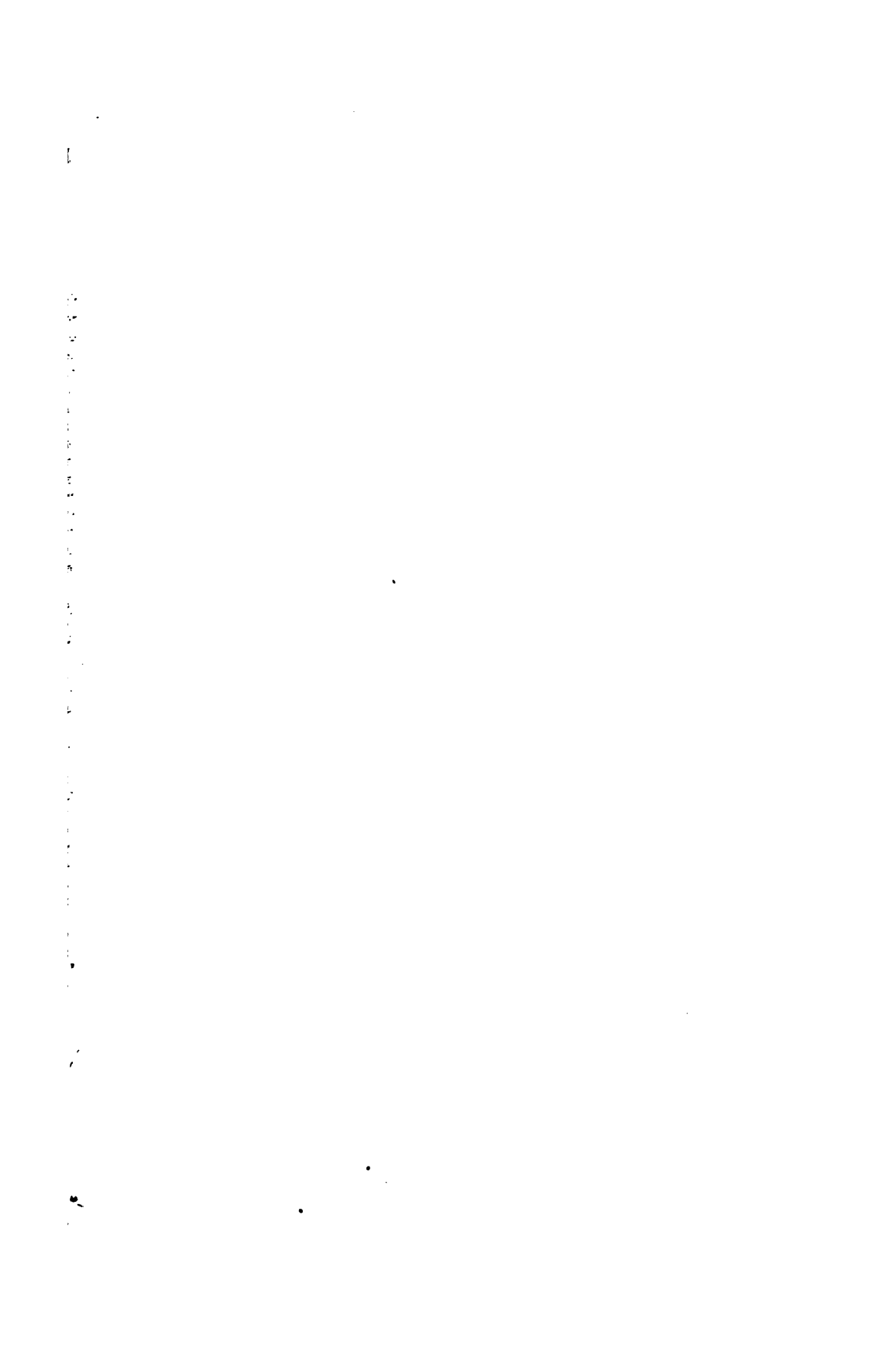
Fig. 3. A perpendicular lamina of the skin of the human palm. *a*. Outermost layer of the epidermis. *b*. Middle layers of the same. *c*. Mucous tissue of Malpighi. *d*. Papillæ. *e*. Dermis. *f*. Adipose tissue. *g*. Sudorific glands. *h*. Ducts of the sudorific glands.

Fig. 4. Skin of the scrotum of an infant. *a*, *a*. Lymphatic vessels; *b*, *b*, arteries. (Gurlt.)

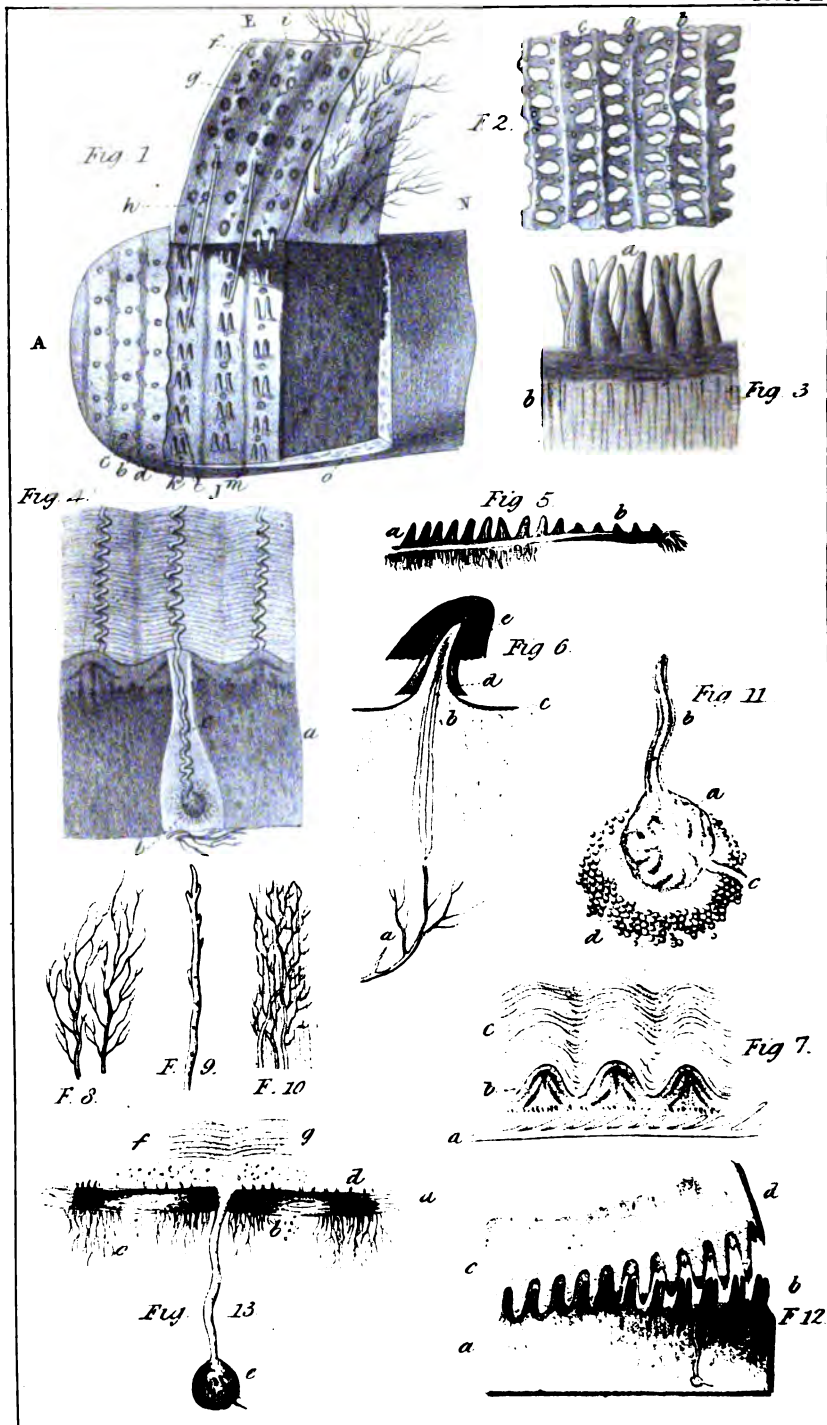
Fig. 5. Portion of the skin of the adult scrotum. *b*, *b*, *b*. Plexus of lymphatics injected with mercury, and exposed by the removal of the first epidermic lamina. *a*, *a*, *a*. The same plexus, with the lymphatic vessels which pass to it, to form it. Here the epidermic lamina has not been removed; here and there a few hairs are seen which pass from the skin. A straight line (*c*, *c*) indicates the cut of the epidermis.

Fig. 6. The penis of an infant: the prepuce is divided. *a*, *a*. Lymphatic vessels of the skin of the penis, communicating with the plexus of the prepuce. *b*, *b*. Plexus of lymphatic vessels, injected with mercury, of the skin of the prepuce, seen on its internal surface. *c*. The same vessels of the glans.

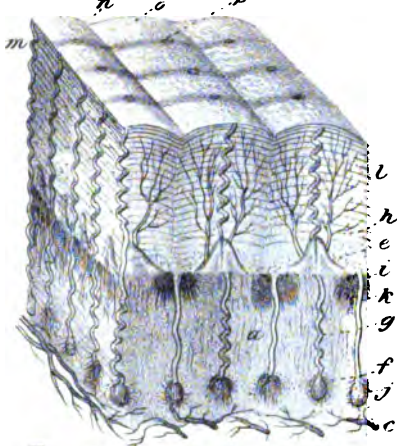
Fig. 7. One of the aspects presented by the human dermis beneath a magnifying glass, when cut parallel to its furrows. *a*. Blood-vessels covered with capillary filaments penetrating the dermis. *b*. Nerves becoming capillary. *c*. Mucous glands, placed at unequal heights, and anastomosing with one another. Their excretory canals penetrate as far as the epidermis. *d*. Spiral sudoriferous canals. *e*. Fragments of vessels. *f*. An infinitude of vessels or of capillary nerves. *g*. Colorific apparatus, surmounted by its excretory canals. *h*. Papillæ.







*Fig. 1.*



*Fig. 2.*

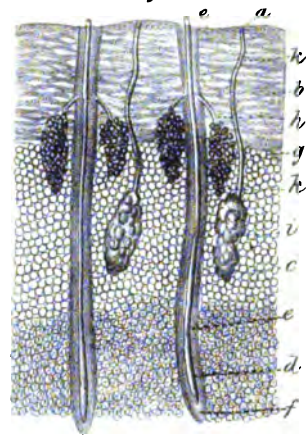


Fig. 3.

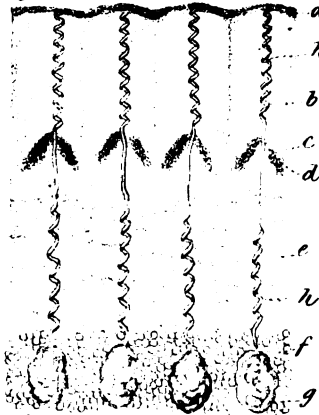
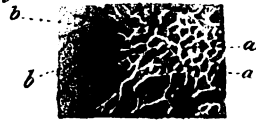
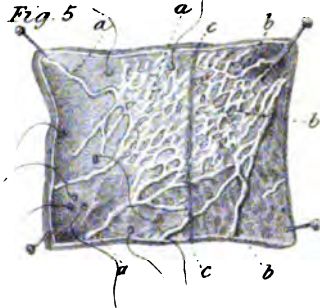


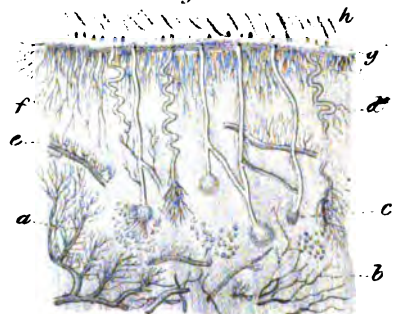
Fig. 4.



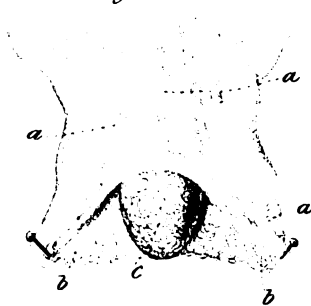
*Fig. 5*



*Fig 7.*



*Fig. 6.*





# INDEX TO VOL. II.

OF THE

## BRITISH AND FOREIGN MEDICAL REVIEW.

	PAGE		PAGE
<b>A.</b>		Blizard, Sir Wm., Memoir of, by Mr. Cooke	205
Abortion, effects of ergot in	276	Bloodletting, Dr. Wardrop on	171
Abousson, M. on worms in the air-passages	249	Blood in the heart, Dr. Wardrop on	218
Abscesses, secondary, Mr. Travers on	10	catamenial, acidity of	274
Absorption, Dr. Carson on	599	Books received for review	306, 613
Acone, M. Rayer on	150	Botanical Society of Edinburgh	611
Aconitine, Dr. Turnbull on	500	Bouillaud, M. his Treatise on the Heart	309
Air-passages, worms in, death from	249	Bostock, Dr. analysis of calcareous tumours by	164
Alexander, Dr. on puerperal fever	490	Boiling, effects of, on meat and vegetables	282
Albers, Dr. on aneurism of the thoracic duct	535	Bone, on the morbid anatomy of	585
Alessandrini, Prof. on the development of muscle	543	Brain, Dr. Philip on affections of the structure of, Dr. Macartney on ib. on the treatment of the diseases of	129
Anatomy, Comparative, Mr. Swan on	192	relation of, to the stomach	370
of parts concerned in operations	196	Dr. Harlan on the functions of	518
teachers of, regulations concerning	610	Bright, Dr. on morbid changes in the peritoneum	167
Aneurism of the thoracic duct	535	Brewster, Sir D. on the crystalline lens	218, 599
of the heart, circumscribed	460	Breschet, M. on the structure of the skin	429
, popliteal, Mr. Adams on	600	Brandis, Dr. on the use of cold in disease	529
Aphthae of children, Dr. Naumann on	367	British Association, report of	594
Asphyxia of children, M. Mende on	359	Bullæ, M. Rayer on	149
, Mr. Taylor on	422	Bushe, Mr. on the operation for cleft palate	493
Association, British, Report of	594		
Provincial Medical, 300,	601	<b>C.</b>	
Eastern branch	300	Cachexia, Mr. Travers on	19
Southern branch,	606	Cartilages of joints, on ulceration of	163
Asthma, thymic, Dr. Hirsch on	237	Catamenia, acidity of	274
Atrophy of the heart, M. Bouillaud on	336	Carditis, M. Bouillaud on	330
Dr. Carswell on	460	Cavities of the heart, changed dimensions of	338
Auscultation, Dr. Latham on	480	Carswell, Dr. his Pathological Illustrations	456
Austria, vaccination in	280	Cantharides, on the nature and use of	548
		Carmichael, Mr. on the nature of tubercles	597
<b>B.</b>		Carson, Dr. on absorption	599
Becker, Dr. on the temperature of the sea	520		
Bell, Sir C. on the relations of nerves	215		
Belladonna, its use in stricture and spasm	261		
Berndt, Dr. his clinical communications	176		
Beaumont, Dr. his experiments on digestion	375		

Calculus diseases, M. Civiale on	276	Crustacea, on metamorphoses in	2
Cæsarean operation, cases of	270, 568	Croton oil in affections of larynx	5
Cellular membrane, erysipelas of	23		
Cholera in Italy, statistics of	279	D.	
Children's Diseases, treatises on	353	Denmark, present state of medicine in	28
diagnosis of	353, 356	state of the medical profes-	
anatomical peculiarities of	354	sion in	29
dietetic rules for	386	Devergie, Dr. on Forensic Medicine	39
evil of overtasking minds of	ib.	Death, apparent, Mr. Taylor on	42
on softening of the mucous		Dermis, anatomy of the	431
membrane in	551	Delphinia, Dr. Turnbull on	500
Chloride of soda in typhus fever	64	Denman, Dr. his aphorisms on par-	
intermittent fever	553	turbation	523
Chemistry, Mitscherlich's Elements of	188	Decidua, on a new structure in the	600
Chelius, Professor, Surgical Observa-		Diabetes, Dr. Berndt on	179
tions by	259	sugar found in the blood in	ib.
Chalybeate water, artificial, formula		Digestion, on the physiology of	368
for	555	Dietetics, Dr. Combe on	ib.
Chevallier, M. on colica pictonum	573	Dictionary of medical terms, Dr.	
Chomel, M. his clinical lectures on		Palmer's	508
typhus	33	Donné, Dr. on the pulse and respira-	
Cicatrices, on warty tumours in	161	tion	246
Cinnabar fumigations, new mode of		Dropsies, Dr. Osborne on	222
applying	555	Dresden Lying-in Hospital, report of	273
Circulation through the lungs, on the	518	Drake, Dr. biographical notice of	305
Circulation in insects, on the	213	Drinks, dietetic rules concerning	387
Civiale, M. on calculus diseases	276	Drowning, death by, Mr. Taylor on	426
Clinical medicine, Dr. Latham on	473	Droste on softening of the mucous	
Cleft palate, operation for, by Mr.		membrane	551
Bushe	493	Dupuytren, M. his new method of	
new instruments		lithotomy	99
for	496	Duparcque, M. on diseases of the	
Constitutional irritation, definition of	3	uterus	511
Collins, Dr. his treatise on Midwifery	71	Dunglison, Dr. on the medical insti-	
Convulsions, puerperal, Dr. Collins on	86	tutions of America	583
Cock, Mr. on malformations of the in-		Dublin Lying-in Hospital, statistics of	72
ternal ear	167		
Cooke, Mr. his memoir of Sir Wm.		E.	
Blizard	205	Ear, internal, malformation of	167
Coulson, Mr. on disease of the hip-		Eastern Provincial Medical Associ-	
joint	231	ation	300
Conjunctiva, on the arteries of the	235	Ecthyma, M. Rayer on	154
state of, in purulent		Elliottson, Dr. on creosote	168
ophthalmia	505	Endocarditis, nature and symptoms of	321, 326
Copaiba, new mode of administering	243	Entozoa, tubercle and cancer classed as	598
Compression, effect of, in orbitis	253	Epilepsy, on the use of indigo in	244
Cornea, on foreign bodies in the	269	Epidermis, anatomy of	429, 446
Copenhagen, university and medical		Erysipelas, Mr. Travers on	23
establishments of	285	pathology and treatment	25-6
Conjunctivitis, Mr. Middlemore on	345	of	25-6
Combe, Dr. on the physiology of Di-		its connexion with puer-	
gestion	368	peral fever	487
Contusions, their import in legal me-		Eruption, peculiar, in typhoid fever,	
dicine	415		36, 40
Cold, on the use of, in diseases	529	Ergot, its use in abortion	276
Colica pictonum, on the causes and		parturition	525
cure of	573	Erectile tumours, surgical treatment of	564
Colleges, medical, in the United States	583	Ether, on the production of	191
Coroner's inquest, evidence in	608	Examiners of Apothecaries' Company,	
Crises in typhoid fever, M. Chomel on	41	report of	606
Croup, spasmodic, Dr. Ley on	112	Eye, natural cures of diseases of	270
from enlarged thymus	237	Mr. Middlemore on diseases of	344
Creosote, on the medical properties of	168		
simpler mode of obtaining	283		

	PAGE		PAGE
<b>F.</b>		Glossopharyngeal nerve, functions of	600
Fever, puerperal, Dr. Collins on	91	Gonorrhœa, analogy to ophthalmia	504
Mr. Moore on	481	Goyraud, M. on fracture of the radius	256
Dr. Alexander on	490	Gout, the magnet a remedy in	246
nature of	482	Gully, Dr. his translation of Magendie's	
from morbid state		Formulary	207
of the blood	483	Guislain, M. on gangrene of the lungs	546
its connexion with		Guy's Hospital Reports	198
erysipelas	487	Guyot, M. on the effect of heat on	
importance of dis-		wounds	263
crimination in	491	Gurlt, M. on the structure of the skin	429
typhoid, nature of	59		
M. Chomel on	33	<b>H.</b>	
symptoms and pro-		Hawkins, Mr. on warty cicatrices	161
gress of	34	Hanging, death from	418
appearance after		Harlan, Dr. his medical researches	518
death in	43	Heart, mechanism of the	599
exciting causes of	51	change of the cavities of	338
diagnosis of	55	polypi of	339
prognosis of	56	causes of the sounds of	598
treatment of	59	diseases of, M. Bouillaud on	309
of growth, Dr. Reich on the	219	causes of	311
intermittent, use of chloride of		progress of	312
soda in	553	prognosis of	313
treatment of	176	use of veratria in	499
Fistulæ, vesico-vaginal, new mode of		atrophy of	336
treating	561	neuroses of	336
intestinal, use of actual cau-		neuralgia of	337
tery in	567	Heat, effect of, on wounds	263
Fletcher, Dr. biographical notice of	302	Hecker, Dr. on the medical societies	
Fœtus, diseases of the	365	of Prussia	577
position of the head of, in		Hemorrhage, uterine, during labour	81
labour	524	fatal, from uterine tu-	
without heart or lungs, ac-		mour	571
count of a	596	Herpes, Mr. Rayer on	149
length of, at different periods	406	Hernia, use of belladonna in	261
Follicles, intestinal, diseased in typhus	45	on the treatment of	566
Forceps, use of, in delivery	78	Henry, Dr. obituary of	612
Formulary of new remedies, Magendie's,	207	Hip-joint, Mr. Coulson on disease of	231
hospitals, Edwards, &c. on,	210	Hirsch, Dr. on thymic asthma	237
Fothergillian medal for 1837-8	302	Hooping-cough, endermic treatment of,	178
Forensic medicine, Devergie and		Howship, Mr. on fracture of the neck	
Taylor on	390	of the femur	159
Food, proper kinds and quantity of	383	Hospital Reports, Guy's and St.	
Fracture of the neck of the femur	159	Thomas's	198
radius, M. Goyraud on	256	Hospitals of Ireland, account of	185
Fricke, Dr. on compression in orchitis	253	Hosack, Dr. biographical notice of	306
France, medico-legal proceedings in	392	Hourmann, M. on the pneumonia of	
Fumigations of cinnabar, new method		the old	543
of	555	Houston, Dr. on a fœtus without heart	
		or lungs	596
<b>G.</b>		Hufeland, Professor, obituary of	613
Gangrene of the lungs in the insane	546	Hydrocele, cure of, by gaseous injec-	
Gangrenous inflammation, Mr. Travers		tions	267
on	28	Hydropericardium, M. Bouillaud on	331
Gas, cure of hydrocele by	267	Hypertrophy, Dr. Carswell on	456
Geneva, on suicide in	277	of the heart, M. Bouil-	
Gerdy, M. on the morbid anatomy of		laud on	332
bone	535		
on the treatment of hernia	566	<b>I.</b>	
Glands, sudorific, account of	438	Illustrations of the forms of disease,	
lymphatic, inflammation of	558	Dr. Carswell's	456
Glanders in man, cases of	241	Impetigo, M. Rayer on	152
Glaucoma, Mr. Middlemore on	248	Infants, on the care of	221







